

# Electric Railway Journal

Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

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## Electric Railway Gets Its Case Before Chamber of Commerce of United States

AT THE meeting of the United States Chamber of Commerce held in St. Louis this week a distinct advance was made in acquainting the commercial interests of the country with the deplorable condition of the electric railways. The presentation was not merely or principally a plea for help for an important industry suffering on account of conditions not of its own making. It was a straightforward business argument based upon the essential nature of the service rendered to the industrial and commercial life of the country.

Many of those in attendance at the convention had undoubtedly never realized the destructive effect which the depreciation of the dollar has had upon an industry unable to advance its charges. Or if they knew about the conditions in their own towns they did not appreciate the fact that the condition is universal. Under the direction of Mr. Pierson's committee all of these facts were brought out and a national campaign was outlined by which it is hoped that some relief will be obtained.

When a railway asks only for higher fares the public may be excused sometimes for thinking the request unjustified, but when the same request is urged by interests outside of the railway as well, as being for the direct welfare of all, the application has far greater weight. We hope, therefore, that the St. Louis conference and the resolutions that it has formulated will mark an economic turning point for electric railways.

## Don't Wait for Henry Ford to Solve Your Problems

BECAUSE of the enormous amount of publicity given to Henry Ford's proposed gas-drive car, our readers will be glad to have the definite first-hand statement which appears elsewhere in this issue. From this statement based on interviews with both Mr. Ford and C. E. Sorensen, the general manager of his tractor plant, it is clear that it would be decidedly unwise for any electric railways to delay the ordering of light-weight safety cars in the hope that something very much better is to be had within a short time. As a matter of fact, Mr. Ford has not even decided whether he will build such cars commercially. A policy of waiting would be particularly futile in the case of the many electric railways which can give a greatly increased service without spending an extra dollar for power equipment and coal if they replace their present 30,000-lb. to 50,000-lb. track pounders by the 15,000-lb. anti-friction bearing safety cars. It is doubtful whether Mr. Ford would even have thought it worth while to try his hand at light-weight car design if he had not in his own experience run across so many obvious examples

of power-wasting and track-ruining rolling stock. Let Mr. Ford go ahead in his praiseworthy endeavor to save fuel and metal; but instead of hanging about waiting for a miracle let the electric railway operator also get busy and pay serious attention to the splendid results which are being attained with the light-weight car already available for "more service at less cost."

## Taking a Chance With Grave Civic Dangers

THE refusal of the Illinois commission to grant an increase in fare to the Chicago Surface Lines leads one to wonder where the security holders "get off" when a distinction amounting to about \$44,000,000 is drawn between valuations for city purchase and for rate-making. It is strange that the commission arbitrarily struck out several important items on which the investors had been led to expect a reasonable return.

One of these items, for instance, is \$8,192,750 which was added to capital account under the ordinances for "superintendence and conducting construction." The Illinois commission has from time to time approved for the Chicago companies bond issues which included 10 per cent for this item. Such approval must have been given with the knowledge that the companies would have to pay interest on the full amount of the securities issued. The subsequent action in eliminating these allowances must be at least confusing to investors.

The commissioners figure out to their satisfaction that business is picking up so well for the Chicago Surface Lines that a return of 7 per cent may be looked for on the reduced valuation. They concede that the management is not responsible for the small receipts for certain months in 1918, and that, on the contrary, the affairs of the company "appear to have been prudently and efficiently managed." This admission will not pay a return on the large amount of capital which the commission says is not used in public service.

We might dwell on the point that several other items which make up this \$44,000,000 represent money actually paid for property once used for the benefit of the car riders. If cable lines and power houses became obsolete and the management on the arbitrary demand of the city scrapped this property so that its patrons might have a more modern system, fairness would seem to indicate that the invested capital which that property represented is still entitled to a return.

But what's the use? The case has been decided and the companies must struggle along until, perhaps, another valuation is made. If it should happen that this later valuation would show the system to be worth even more than the total existing capital account, we wonder if the Illinois commissioners will be bold enough to allow a reasonable return on the new total?

At a time when commission rule is on trial and when the solvency of utility corporations is so essential to the welfare of the nation, the Illinois commission might have given heart to the industry by some such temporary measures as Commissioner Lucy suggests in his minority opinion. Even a 6-cent fare would have given courage to capital while a thorough valuation of the properties was being made. Such emergency relief "would at least have justified itself as an insurance against possible grave civic and financial dangers," as one of the leading Chicago newspapers put it.

### High Prices Will Remain— Face the Facts and Act

**S**TOP looking backward, and do business! Such is the vital message of the National Prosperity Campaign to the American business man—a message which undoubtedly signalizes the best leadership of the day. This campaign, to which we have referred several times, is of national significance and essentiality, and short-sighted will be the business man who does not support it to his last ounce of energy.

Electric railways should not hesitate to join enthusiastically in the campaign, for not only does it possess among its leaders a prominent electric railway man, P. H. Gadsden, but also it has a basic principle—regarding the prolonged maintenance of the present high-price level—which is of peculiar interest to such carriers. The argument often made against fare increases has been that higher costs were only temporary and that security holders could with justice be compelled to bear present losses. This argument has been repeated with added emphasis since the armistice was signed, many seeming to believe that the cessation of hostilities should mean a sudden decline in prices to the pre-war level.

Regulatory bodies do not go so far astray in their economic thinking as does the general public, but even the commissions are inclined to be too hopeful regarding lower prices. For example, the Wisconsin Railroad Commission in recently denying a fare increase in Milwaukee stated that the last six months of 1918 included the period of highest operating costs and that reductions rather than further increases were likely to come. Similarly the Illinois commission in the Chicago Surface Lines case has just expressed the opinion that estimates of material costs "will not have that degree of permanency which entitles them to be considered as fixed elements in adjusting rates." But such predictions, even if accepted without qualification, should not suffice in rate cases. The time element should be more carefully considered.

When will the general price level drop near to the pre-war mark? If this drop is a matter of a few months, the electric railway industry may survive without increased revenues—its crippled capacity for service and its diminished credit being, of course, negligible factors. The public may be too short-sighted to see, and commissions too optimistic to seek to prevent, such impairment of the industry, but neither the public nor the commissions can be so utterly stupid as to fail to realize that inadequate revenues and continued high prices for fifteen, twenty or more years would mean absolute ruin for the electric railway industry. Yet such an elapsed time for the continuance of the present high-price level is exactly what is in the mind of practically all leading economists.

The danger which they and the leaders of the National Prosperity Campaign would have every commissioner, railway operator and business man avoid is false reasoning from the particular to the general. Since the signing of the armistice the cost of living for American wage earners has declined 2.8 per cent; copper has dropped to the pre-war level, and pig lead is only 17 per cent above it. These, however, are reactions due to special causes, and, as pointed out elsewhere in this issue by Mr. Holden, the general course of prices since November bears out the theory that a new price level has been established which will not fall in the near future. The scarcity demand for commodities, the high cost of labor and the enormous inflation in the currency supply have operated to cause price increases similar to those during the Civil War. It was thirteen years after this war that prices returned near the pre-war level, and the differences between that situation and the present one are considered by reputable authorities to be such as will increase rather than lower the number of years required for price deflation.

The conclusion, therefore, is twofold. First, the commissions must face economic facts and substitute for a reverence of former prices a practical fare reckoning based on present costs. They must not sacrifice a vital industry to a baseless hope. Second, the electric railways, as rapidly as they are enabled to do so, should go ahead full speed with construction and production. Unified enthusiastic activity should be the watchword of all business.

### High Price of Labor Should Stimulate the Use of Labor-Saving Devices

**T**HERE are many devices in use and coming into use on electric railways that have demonstrated their ability to save labor. The present is the time for putting these devices to even more extended use than before, for labor is expensive and is going to remain so for a considerable time to come. It is therefore useless to defer the purchase of needed equipment in the hope that this equipment is going to be cheaper soon, because it is largely the high cost of labor that keeps up the cost of equipment, and by the time labor comes down in price the equipment will have more than paid for itself, if wisely selected.

These conditions pertain with respect to standard equipment, and even more so with regard to apparatus still in process of development. Take for example the automatic substation. While this has now reached a fair degree of standardization, still users are constantly devising improvements which are, when worthy of general adoption, incorporated by the manufacturers. This constant condition of improvement will naturally have a tendency to keep up the cost. A more general adoption of the automatic control principle will operate to bring down the price because parts can be manufactured in larger quantities. Of course the chief factor in keeping up the price of automatic substations, like everything else, is the high cost of labor. On the other hand labor is a large item of expense in manually-operated railway substations and will always remain so. Hence, the higher the cost of labor the more opportunity there is for the automatic substation to save operating costs. This explains why automatic control has made such satisfactory headway even under the stress of war-time opposition.

### British Electrification as a National Project

THE creation of a Ministry of Ways and Communications for the United Kingdom is one of those bold departures and conceptions accelerated by the Great War and characteristic of Britain's new spirit of enterprise. Indeed, it is planned as one of the great steps toward making up for some of the dreadful wastage of the past four and one-half years. Duplication and unnecessary services are to be eliminated in one place and better means of transport and communication are to be introduced into other places. As a political experiment its success, apparently, will depend upon finding a succession of despots who are both benevolent and able, for the bill gives unprecedented power to the new minister.

However it is not with the political aspects of this change that we are now concerned, but with the effect of this concentration of transport control upon the fortunes of British steam railroad electrification. To all appearances, this effect will be more than good. Sir Eric Geddes, the proposed minister, is a friend of electrification. The bill drawn under his direction calls for a truly grandiose scheme of electric generation, distribution and use. In fact, if one were to judge from the popular newspapers, the electric foot-warmer will soon displace the habit of getting one's pre-breakfast tea in bed. In all seriousness, we would rather expect too little than too much from a greatly enhanced use of electricity, whether in transportation or other fields. It is hardly conceivable that all of the power stations and distribution systems are so inefficient as compared with the coming super-stations that they need be consigned to the scrap heap forthwith. In addition to the existing large turbine plants, it will no doubt be found desirable to tie in with a number of older ones that will be good for stand-by service for some years to come. It is indeed a ravishing dream to see a chain of stations, say with units of 50,000 kw., running within a radius of 30 miles everything from a main-line train to a cheese-paring machine; but it is not likely to prove so attractive when it is found that the difference in pounds of coal per kilowatt-hour efficiency will not cover the additional fixed charges. In brief, engineering must go hand in hand with common sense.

These thoughts on power generation and transmission are closely related to the most ticklish question of all—what system should be used? There will be delay enough in the temporary or permanent discarding of the plans of individual railroads without wasting years in argument as to what system should be universal, if so chimerical an idea is contemplated. Electrification cannot begin too soon or under more favorable conditions because, as the result of the war, considerable reconstruction of the permanent way is necessary in any event. It would be deplorable if the partisans for different systems were to repeat our own errors, all the more so as there is no longer any question about the reliability of any of the systems over which so many arguments have been fought.

At a distance of 3000 miles it may seem presumptuous to offer counsel. It is true that we lack all the facts, but we are at least as non-partisan as the man who said: "I'm neutral. I don't care who licks Germany, so long as she's licked." We don't care what system, or systems, are used to electrify Britain's railroads, so long as they are electrified. And it is this disinterestedness, based upon our experiences, that leads us to say: "Don't try to electrify everything to one pattern.

There is a degree of bigness beyond which standardization can be a curse instead of a blessing. Do not fear to use one system for your great suburban areas, a second for your long main lines, a third for your long heavy grades. Perhaps you will find that, today, high-tension direct current meets a wider range of conditions than any other. Do not, therefore, despise the alternating-current systems whose pioneering made the raising of direct-current voltage imperative if it was to stay in the field. As electrical engineers and business men who have been given a great responsibility, you will ask but two questions: Is electrification of this particular track going to pay, and if it is, what kind of electrification will do the work at the lowest over-all cost?"

### Supreme Court Rather Minimizes the Burdens of War-Time Operation

THE ruling of the United States Supreme Court in the Columbus case, noted in last week's issue, is a disheartening blow to electric railways in Ohio which had hoped for judicial relief from war burdens. The decision, however, is of local application on account of the peculiar limitations of governmental powers in that State.

The Columbus Railway, Power & Light Company, confronted with seemingly impossible burdens of operating costs, desired to surrender its franchises because of the inadequacy of the stipulated fare. The court holds, however, that the contracts between the company and the city became mutually binding for the ordinance period notwithstanding the unforeseen difficulties which arose. The court maintained that the war and the resulting higher costs of operation did not constitute the *vis major* which judges frequently recognize as excusing non-performance because of impossibility. It admitted that the case involved a hard bargain but averred that "equity does not relieve from hard bargains simply because they are such."

Many may doubt that the contracting parties should reasonably be expected to have foreseen the difficulties arising out of operation under war conditions with a fixed fare. The court has ruled, however, and the company must seek another way out. Under the Ohio Constitution the jurisdiction of the Public Utilities Commission is limited by home-rule provisions, but the city of Columbus should lose no time in redrafting its contract with the company in accordance with far-sighted and constructive principles.

The decision, as regards its general applicability, concerns merely the right of surrender of the direct parties to a franchise, and not the right of the state to intervene. It in no way affects the principle, which has been enunciated by the United States Supreme Court in a number of cases, that rate-making, unless unmistakably given away, is part of the police power of the state to be exercised through the Legislature or its agent. In seven states the question of legislative or commission jurisdiction over franchise rates has not been determined. In the other cases of commission control, except in Ohio, New York, Michigan, Georgia, Colorado and Alabama, where the regulatory laws are defective or constitutional difficulties regarding home-rule are said to arise, the state can intervene to alter a franchise rate. The plight of the Columbus company is surely eloquent evidence of the wrongs that may ensue from an abridgement or imperfect use of the police power.

# The Zone Fare in Practice

## EDINBURGH

Edinburgh Is the Only British City that Can Vie with New York in Capacity of Tenements, These Buildings Being a Relic of the Time When the Ancient Capital of Scotland Was a Citadel Town—Delay in Extending the Suburbs in Modern Times Is Due Largely to the Limitations of the Cable System, which Shortly Will Be Electrified

By WALTER JACKSON

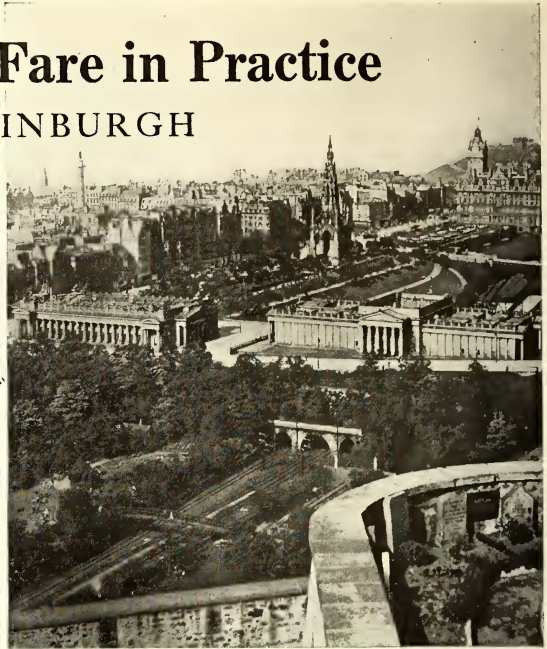
ALMOST from the Middle Ages Edinburgh, so famous for its beautiful location, has had a less desirable degree of note because of its tall tenements, the highest and largest in the United Kingdom. The origin of these tenements is assignable to two chief influences: (1) The growth of the old-time city on the slopes and top of the hill on which the citadel or castle of defense was, and still is, located; (2) the imitation of the French "flats" idea at a time when Scotland and France were closely associated. At first many of the houses clustered between the Castle and Holyrood Palace were the homes of the nobility, and to this day some of the structures bear the ancient coats-of-arms. With the passing of a separate royal court, the original tenants gradually drifted away until the mansions of the wealthy had degenerated to the hovels of the poor.

It would be easy to find in the novels of Sir Walter Scott—almost the patron saint of Edinburgh—many an interesting description of the housing conditions in the city. It is doubtful, however, that anything more typical of its dwellings in the eighteenth century has been written than the following quotation from *Humphrey Clinker* by Tobias Smollett:

The water is brought in leaden pipes from a mountain in the neighborhood to a cistern on the castle hill, whence it is distributed to public conduits in different parts of the city. From these it is carried in barrels on the backs of male and female porters up two, three, four, five, six, seven and eight pairs of stairs for the use of particular families.

Every story is a complete house occupied by a separate family, and the stairway being common to all is generally left in a very filthy condition.

Plenty of these structures are still standing, as will appear from the illustration on page 857 of a group of seven-story tenements on High Street. But it is no longer necessary for either male or



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EDINBURGH, LOOKING TOWARD PRINCE'S STREET AND SCOTT MONUMENT

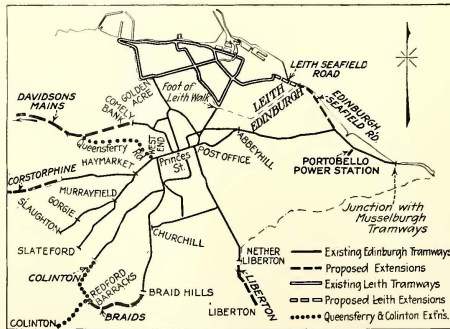
female porters to carry water up the stairs. Nor are the stairways in a filthy condition, for they are now electrically lighted by the municipality, which also imposes a special tax for their periodical cleaning by an outside caretaker.

### FLAT-LIVING HABIT LONG INGRAINED

According to J. A. Williamson, city architect, Edinburgh, the old habit of living in flats became so ingrained that it has continued down to the present day. The narrow closes and wynds (alleys) of olden times had no place in the new scheme, but four and five-story buildings *a la Glasgow* were still the customary thing.

A specimen of these styles, as built in the Gorgie section of Edinburgh, is reproduced on page 857.

In a discussion on Jan. 8, 1919, Mr. Williamson said that for four and one-half years not one house for workmen had been built because of the scarcity of labor and the high cost of material due to the war. Present labor and material conditions were such that private enterprise would not touch the building business except for costly private homes. Asked as to pre-war conditions, he said



MAP OF EDINBURGH CORPORATION TRAMWAYS AND PROPOSED EXTENSIONS UNDER ELECTRIFICATION PLAN

that it would have been cheaper to live in the suburbs, making all due allowance for cost of transit, if the people could have been tempted to move by the provision of comfortable houses not too far out.

Unfortunately, however, little had been done in that direction. Years ago some model cottages had been put up by Mr. Cox, the gelatin manufacturer. A workmen's co-operative building society had also built some two-flat houses with separate entrances and located twenty-nine to the acre. The efforts of the municipal government itself during the past decades had centered on relieving the old buildings of their worst features.

The city, Mr. Williamson continued, now owns 130 acres in the Gorgie district, which is now used chiefly for public markets but has ample space available for other purposes. It is intended to set aside a portion for manufacturing purposes with direct connection to steam railroad

trackage and to use an area of about 50 acres on which to build fourteen two-flat houses to the acre in groups of four with gardens and other open spaces. A playground of 3 acres would separate the residential section from the markets and slaughterhouses. Diagrams relative to the proposed housing are presented on page 858.

Another site of 50 acres is in contemplation on the north side, negotiations with the owners now being under way. On the whole, the housing scheme is developing so extensively that the city is in negotiation for ground equivalent for the provision of about 3500 houses, the intention being to aim at about 10,000 altogether in the immediate future. This will involve about £6,000,000 of capital expenditure.

Land is acquired usually on the basis of a perpetual annual rental termed "feu," a survival of feudal times. Land used for farming purposes carries a very low rental compared with that for the same land to be improved with buildings. To prevent holders of such lands from charging a rental that would give them this unearned increment, Scottish municipalities are seeking the enactment of a law which would enable them to acquire existing open land without stating the purpose to which they intend to put it. Such freedom would be the first step in erecting houses at a total cost that would permit a reasonable return on the investment.

#### DIFFERENTIAL FARES HAVE NOT HINDERED SUBURBAN DEVELOPMENT

According to circulars of the Scottish Local Government Board, quoted by Mr. Williamson, it is agreed by the government to limit the expenditure on the part of the local authorities to 1d. per pound of the local taxes, the State making up the rest of the annual loss on housing schemes. In Edinburgh the 1d. in the pound produces on the assessable value of the city about £12,000 to £13,000, so that Edinburgh would be required to build houses up to this limit before government aid was available at all. The government plan provides that not more than twelve houses shall be placed on an acre and that each shall have at least three rooms.

The matter of housing has been discussed in the foregoing wealth of detail to bring out the fact that there are other factors than rate of fare or amount of transportation to cause or continue congestion. In the case of Edinburgh, there are grounds for believing that the adoption of a cable system and failure to electrify it years ago have had a discouraging influence on building development. Nevertheless, the majority of the Council, judging by their recent (January, 1919) rejection

of the universal fare plan of Councillor MacLaren, as mentioned later, do not hold the system of differential fares responsible to any tangible degree.

The relations of the city with the present operating company, the Edinburgh & District Tramways, have not been particularly cordial during the past decade or so. The company knew that the twenty-one-year lease, which expires on June 30, 1919, would not be renewed because of dissatis-

faction with the service. Hence the property has been allowed to deteriorate. This is the case not only with the cars, which are owned by the company, but also with the right-of-way and track, which are owned by the city. Because of the latter circumstance, arbitration proceedings are being held to fix the extent of the reimbursement to which the city is entitled when the new municipal management, the Edinburgh Corporation Tramways, takes over the property on July 1. Aside from the conditions arising out of the franchise termination, the war made it impossible to get new cables, so that in some instances lines had to be shut down for a week at a time while repairs were being made.

All in all, Edinburgh with a population of 300,000 and an area of 19 square miles had only 48 miles of single track or 25½ miles of line. All is cable except



GENERAL POST OFFICE AND WATERLOO PLACE, EDINBURGH



To R. STUART PILCHER has come the unique opportunity of constructing and operating a street railway system *de novo* in the year 1919! As the reason for the supersession of Edinburgh's antiquated cable system by electric cars and gas buses are set forth in the accompanying article, one need mention only why Mr. Pilcher is exceptionally qualified to deliver the goods. As general manager of the Aberdeen Corporation Tramways, with which he was con-

nected for twelve years, he introduced a number of car comforts that are associated more with American than British practice. As an operator, he had great success with a combination of short-distance stage and full-route universal fares that appears well suited for towns of medium size; and he demonstrated that the prepayment system is by no means impracticable where more than one class of fare is charged. His memorandum on fares, quoted in the article, is ample evidence that he is a keen observer of the American practices and tendencies. Mr. Pilcher visited the United States and Canada shortly before the war. One other direction in which he has been a leader is the use of power-checking instruments on cars. Aberdeen having been one of the first to install them as early as 1908. All in all, one may rightly expect that the Edinburgh Corporation Tramways within the next two or three years will become the embodiment of the best practices in the inter-operation of tramways and buses.



as outlined earlier in this article. It is safe to assert that any houses built by the city or anyone else will be rented fast enough provided good transportation is furnished to reach them—and such additional transportation is a part of the electrification plans of the city, as will be seen.

The suggestion of Councillor MacLaren for a universal fare with transfers was considered carefully in a memorandum of Nov. 18, 1918, prepared by R. Stuart Pilcher, general manager of the new Edinburgh Corporation Tramways. In this, Mr. Pilcher pointed out the following:

The universal fare system is based upon giving the greatest advantage to the regular and long-distance pas-

enger. These expedients, however, were not sufficient to meet the rise in working costs. In order to overcome this difficulty, and to adopt a reasonable way of raising additional revenue, zones are now being introduced, the first zone in the center of the city being on the general fare basis of 5 cents. Additional zones are created toward the suburbs and into the outlying districts, the charge usually being at the rate of 2 cents for each zone entered. The introduction of zones in conjunction with prepayment means that the passengers going beyond the first zone must either have tickets provided showing the particular zones to which they are entitled to travel, or have the fares collected again as the car enters each new zone. I believe that the introduction of zones will mean the adoption of tickets, and this will do away with much of the advantage of the pay-as-you-enter system.

The universal system has been found to be wanting in flexibility, and it has also been realized by the tramway



OLD STYLE SIX- AND SEVEN-STORY FLATS IN HIGH STREET, EDINBURGH



MODERN STONE FOUR-STORY FLAT IN GORGIE SECTION, EDINBURGH

senger. On the other hand, the short-distance passenger is not encouraged to ride by this system. The cash fare of 5 cents is distinctly heavy, and even with the discount it does not induce short-distance traffic. Persons who do ride for short distances—and they are considerable—have to pay for the long-distance rider. In fact, that is the principle of this system of fares. It is generally recognized that passengers can travel only so far for a particular fare, after which they are carried at less than cost price and thus at a loss.

The latest developments in America with reference to the fare systems are very interesting and have a direct bearing upon the question under consideration. Of recent years, and particularly since 1914, the American undertakings have been in financial difficulties. The working costs in different directions have been increasing, but the revenue has not been increasing in the same ratio. It has been found that the 5-cent basis for the universal fare was insufficient, and efforts were made to raise the basis. In some cases the public service commissions, which control the fares, agreed to the fare being raised to 6, 7 and 8 cents, but this is naturally most unpopular, especially with the short or intermediate distance passengers, whom it directly discourages. Efforts were also made to charge for transfers, and in many cases transfers are now charged for at the rate of 2 or 3 cents.

authorities that a large proportion of the passengers residing in the suburbs are being carried under cost price. The recent modifications in the system of fares in America, which I have described, make their system very similar to the European system, except that it does not provide for short-distance traffic by smaller cash fares than 5 cents.

The system of fares known as the zone system is in universal use in this country. The tramway systems are divided up into 1d., 1½d. and 2d. stages, the principle of these fares being that passengers shall pay for their ride in proportion to its length. As a rule, the longer the ride the cheaper the rate of travel becomes. In pre-war days ½d. fares were introduced on most of the tramway undertakings; these covered rides varying in length from 600 to 1700 yd. Tramway managers are not in agreement as to the wisdom of introducing ½d. fares, but when restricted to distances which do not interfere with the revenue from penny fares, these fares bring in extra revenue and are an undoubted public convenience. Half-penny fares have been abolished on most systems during the period of the war. In some undertakings the zone fares are rather complicated owing to the multiplicity of stages, which are likely to baffle both the public and the conductors. On the other hand, the stages can be arranged on a simple plan to meet the requirements of both short and long-distance passengers.

The universal fare system could be applied to Edinburgh

as suggested in Councillor MacLaren's memorandum, by arranging for the cash fare to be 1½d., ordinary tickets to be sold at five for 6d. or ten for 1s. It would, however, be necessary to give greater discounts to workmen and children than to the ordinary passenger as is done in the American system. I have taken the figures for the Winnipeg undertaking given in the memorandum mentioned. If similar discounts were given in Edinburgh, the average fare obtained would only be 1.19d. per passenger, whereas in 1917 the average fare for Edinburgh was 1.27d. per passenger. This is a difference of 0.08d. per passenger, and it would be equivalent to a decrease in receipts of £23,562.7s.7d. in the year.

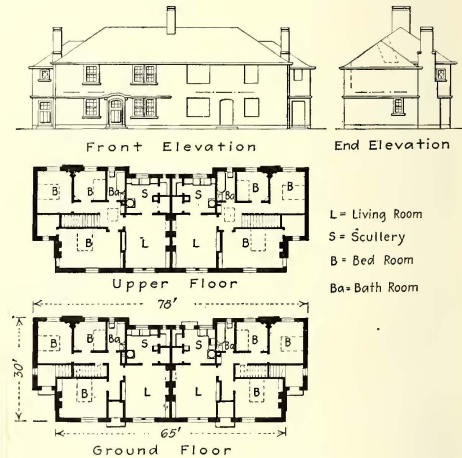
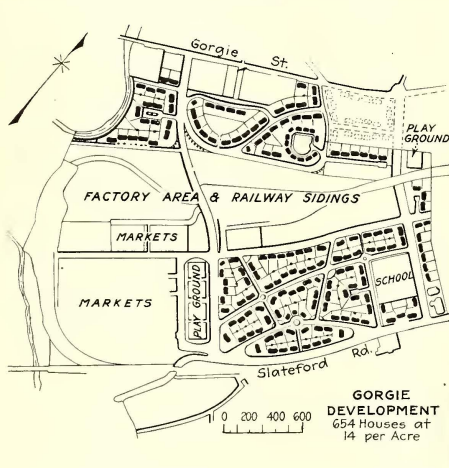
In order to obtain the same revenue, it would therefore be necessary either to reduce the discount to workmen and children below that given in Winnipeg or to raise the cash fares higher than 1½d. Under this system of fares, workmen and children would be required to pay the same cash fare as ordinary passengers. There is no doubt that most of the regular passengers would provide themselves with discount tickets, but what of the poorer classes, many of whom ride infrequently? Would they be prepared to buy books of tickets for themselves and their children?

On the assumption that the 1½d. rate was sufficient and was adopted for the cash fare, there would be, however,

aiming rather at a cheap penny fare radiating from the center. This would not preclude the provision of facilities to give encouragement to short-distance traffic, which, I believe, the Edinburgh public will require in the near future.

Mr. Pilcher, it may be added, has had considerable personal experience with the prepayment system applied to zone-fare collection, having worked out a plan which was in use at Aberdeen for several years. In that city the method of fare charging is practically a combination of the zone and universal fare principles. As described in the April 26 article on Aberdeen, a universal fare of 1d. is charged for a ride from the center of the city to the end of any line, but in addition thereto a smaller fare (½d.) is in vogue for rides of stages up to 0.6 mile. The table given on page 856 prepared by Mr. Pilcher, gives a valuable summary of fares and stages on thirty-four municipal tramways in the United Kingdom.

During February, 1919, Mr. Pilcher presented to the tramways committee of the Council a report covering



LAYOUTS FOR PROPOSED EDINBURGH HOUSING DEVELOPMENT AND SPECIMEN FOUR-ROOM, TWO-FLAT HOUSE EACH FLAT HAVING AN INDEPENDENT DOOR

some important difficulties in operating it. In the first place, a 1½d. fare is very inconvenient, as about 70 per cent of the cash tendered by passengers would require change. Secondly, a duplicate set of tickets would have to be kept by conductors, one set for cash payments and the other set for discount tickets. This would complicate the conductor's work considerably. Pay-as-you-enter cars with a universal system would, of course, do away with the necessity for tickets, but prepayment would require considerable alteration in the existing rolling stock, and this is assuming that the public would be so pleased with the new system of fares that they would give the necessary co-operation which the prepayment of fares requires.

I am in complete agreement with the objects which Councillor MacLaren aims at, viz., the provision of cheap, rapid and comfortable transit facilities to the outskirts of the city. I fully realize the importance of this question in relation to the provision of suitable dwellings away from the present congested city, but I believe that these facilities can be best obtained by adhering to the zone system of fares, rather than by changing to the universal fare system, which in America is being modified on the zone principle. At the same time I do not suggest that the present scheme of stages in use in Edinburgh is suitable to develop long-distance traffic. The scheme would need to be simplified by reducing the number of stages, and

electrification and extensions of the present lines, following their acquirement for operation after June 30. After showing that the cable system is too inefficient to be retained, the report discusses the merits of span-wire, center-pole, side-pole and bracket-arm construction, it having already been stated by Messrs. Brodie, Hamilton and Campbell, consulting engineers, that the overhead electric system was generally better for Edinburgh and its suburban area than conduit or surface-contact systems or self-propelled vehicles like motor buses. Except for Leith Walk and Princes Street, span-wire construction, attached to rosettes where possible, is recommended. For Leith Walk, with its 69 ft. wide, it is suggested that the existing lighting poles be replaced by a center pole construction which will carry both lighting and railway circuits. For Princes Street, which is one of the great "show" streets of Europe, Mr. Pilcher recommends artistic side poles with bracket arms.

Conversion and reconstruction should be carried out



in sections to avoid prohibitive expense and to permit utilization of all existing buildings. About 250 new cars would be required, and these should average say sixty seats each. The cars should be vestibuled for the protection of the motormen, and they should be provided with extra entrances and exits for use during busy times. Magnetic track brakes should be provided on all cars, but cars for heavy grades should also have special mechanical brakes. A double-deck car seating sixty passengers does not need double trucks. A single truck with a wheelbase of 7 ft. to 8 ft. would give steadiness and would traverse the curves with perfect freedom. It would run with less noise, incur less wear and tear, and demand less energy than double trucks. These advantages offset the easier running of double trucks over curved track.

The present cable routes are entirely within the city limits, but in two cases parliamentary sanction has been obtained for extensions beyond the boundaries and additional powers will be requested, particularly for through running with the Leith Tramways. Leith is the harbor of Edinburgh, although a separate municipality. The extensions proposed are shown on the map on page 854. They total 7.24 miles of line, aside from later extensions for districts like Colinton.

As the proposed tramway extensions could not be constructed for two years at the earliest, Mr. Pilcher recommends their temporary operation with motor buses. To that end, and the possible development of other bus services, it is desirable that the city should apply for parliamentary powers to operate motor buses in conjunction with the tramway system outside the boundaries. Powers to operate within the city already exist. The immediate purchase of a few motor buses is urged as a supplement to the existing inadequate and unreliable cable service. Plans have also been approved for the enlargement of the Portobello Station (lighting, power and railway) from 10,000 kw. to 30,000 kw. capacity.

From the foregoing résumé of the plans for Edinburgh's electrification, it is obvious that a reasoned effort will be made to give the people the best possible service in the most efficient way, whether by the electric car or the petrol omnibus, and all under one management to secure proper co-ordination.

### Desirable Characteristics in Tramway Men

IN A PAPER delivered before the Institution of Electrical Engineers of Great Britain an analysis of the characteristics of tramway engineers and others is given. The estimate of qualities needed by certain grades of tramway officials follows:

Grade	Facilities— Percentages in All Cases					
	Financial	Commercial	Technical	Custodian-ship	Book-keeping	Administrative
Chief manager.....	10	5	25	5	5	50
Gen'l engineer.....	2½	5	40	2½	5	45
Power station engineer....	..	5	40	10	10	35
Assistant power station engineer.....	..	5	45	10	10	30
Charge shift engineer.....	..	2½	82½	5	5	5
Foreman.....	..	85	5	2	8	5
Traffic manager.....	5	10	10	15	15	45
Development superintendent.....	5	35	5	..	30	25
Operation superintendent.....	5	15	10	25	10	35
Divisional traffic superintendent.....	5	15	10	25	10	35
Permanent way engineer.....	5	10	35	10	5	35
Assistant permanent way engineer.....	5	5	30	20	5	35
Foreman.....	..	5	50	20	..	25

## American Engineering Standards Association Proposed

### Dr. E. B. Rosa Explains Plan and Purpose of the Engineering Standards Committee and Its Projected Expansion

In the May 1 issue of *Engineering News-Record*, Dr. E. B. Rosa, chief physicist, United States Bureau of Standards, gives at considerable length the first public explanation of the reasons for the widening of the organization of the American Engineering Standards Committee into the proposed American Engineering Standards Association. Some of the principal points in the article are covered in the following paragraphs. This association, if formed, will provide for representation of all societies interested in engineering standards, as well as the appropriate governmental bureaus.

#### NO INTERFERENCE WITH SOCIETY INITIATIVE IS PROPOSED

The cardinal principles of the proposed American Engineering Standards Association are fair play and co-operation. Each society retains its integrity and initiative, and yet recognizes the existence and the rights of others; each society or government body manages certain work of research and standardization itself as now, but with the co-operation of representatives of other agencies invited to participate because of their interest in the subject and the information they can furnish.

The authority of the societies, which they enjoy by virtue of the representative character of the men composing their committees and the quality of their work, will remain undisturbed by the new organization. The Engineering Standards Committee, which will attend to the detail work of the Standards Association, will approve a standard because it is certified by some sponsor society and its co-operating committee, not because the central committee has itself examined it and passed an independent judgment upon it, which that committee will not attempt to do. The quality standards of the American Society for Testing Materials, the electrical standards of the American Institute of Electrical Engineers, the codes and standards of the Bureau of Standards, will derive their authority largely from the reputation of the sponsor bodies that prepare and certify them. They will, however, possess the added advantage that the Engineering Standards Committee, made up of representatives of all engineering and commercial interests and the government, will certify that the procedure of the committee has been complied with, that all interests concerned have been heard and there is every reason for accepting the standard and putting it into general use.

#### ASSOCIATION WOULD ACT AS A STANDARDIZATION CLEARING HOUSE

In addition to a few conspicuous societies and government departments concerned in the making of standards, there are scores of others that co-operate and to some extent initiate such work. Heretofore each has had to find out for itself what work other societies were doing or contemplating, and establish connections as best it could for co-operation or for adjusting matters of conflict. There has been no central agency to keep a record of all standardization work in progress or being organized, to assist in securing the proper degree of

co-operation and to avoid conflict and duplication of effort. The need for such a central co-ordinating agency has been felt for years; it was only a question of how it should be realized. The present committee has not yet attempted to meet this need. The reorganization proposed looks toward accomplishing this important result in an adequate manner.

The present Engineering Standards Committee is composed of fifteen men of the highest standing who represent five leading engineering societies; it was planned also to have representatives of the government. To provide a still broader representation it is now proposed to provide for representation of all organizations and government departments interested in the preparation of engineering and industrial standards. The larger societies should, of course, have a larger number of representatives than the smaller. Since there are many scores of societies and governmental agencies that may be expected to desire representation in such an organization, it would obviously soon become too large for a working standards committee. The evident procedure was to call the large representative body an association instead of a committee, and let there be formed within the association a standards committee.

#### ONE SUGGESTION FOR A WORKING ORGANIZATION

One plan for the new organization provides for ten divisions of engineering and industrial organizations and two representing the government, as follows:

1. Electrical engineering and electrical industries.
2. Mechanical engineering and allied industries.
3. Mining and metallurgy and allied industries.
4. Civil engineering, architecture and building.
5. Chemical engineering and chemical industries.
6. Materials of construction (A. S. T. M. division).
7. Miscellaneous manufacturers.
8. Steam and electric transportation.
9. Automobiles, aircraft and other automotive vehicles.
10. Fire protection and safety engineering.
11. Federal bureaus and commissions.
12. Associations of state and municipal agencies.

The divisions would contain in some cases five to ten and in other cases as many as twenty or more national societies and manufacturers' organizations having a certain common interest.

Most of the business of the Standards Committee would probably be done by an executive committee and the paid general secretary and assistant secretaries acting under it. The various sections of the Standards Committee would be advisers to the executive committee on matters pertaining to their respective subjects. The Standards Committee would report annually to the American Engineering Standards Association, which, as a great self-determining national body, would authorize changes of procedure, provide for the selection of the Standards Committee and approve its budget and plans. Such an organization would be businesslike and effective, and as simple as that of any large national organization. The office staff should include some competent editors and draftsmen to assist in putting standards into good form for publication, in as uniform style as possible.

It would be desirable for the association to publish all standards prepared under its supervision in a uniform edition, fully indexed, and thereby make them readily available at small expense to the general public.

In connection with such publication, they would be carefully studied to see whether there were conflicts or inconsistencies among them, and useful references would be made from one code or standard to another. Such publication in uniform style, with explanatory footnotes and cross-references, would be of enormous value. It would be the greatest step ever taken toward general acceptance and national uniformity in engineering and industrial standards. This would, of course, not interfere with the publication by each society of its own work in its proceedings.

#### BUDGET OF THE COMMITTEE

The American Engineering Standards Association should have an annual income of not less than \$50,000, in addition to the cost of publishing standards, which work would be self-supporting. This income would be derived from a large number of memberships in the association. These memberships would not be personal, but every member would represent some engineering or industrial organization or government department. If one member were appointed for every 500 members of an engineering society, and a membership fee of \$50 were paid, this would amount to 10 cents per year per member of such society, and would not be a heavy tax for so important a matter. It would yield \$1,000 (with twenty members appointed to the association) from a society of 10,000 members, and would give \$50,000 per year when the association had 1000 members. As yet, however, no provision has been made for a large membership, and this proposal is only a suggestion for future consideration.

#### PROPOSED ENGINEERING STANDARDS BODY SHOULD BE STUDIED IN DETAIL AND AS A WHOLE

The matter is of great and far-reaching importance, and there is no need for haste in coming to a conclusion. Full and sympathetic consideration should be given to the question. If anyone doubts the wisdom of the proposed plan, he should attempt to formulate a better one for accomplishing the end in view. Fortunately, there is no conflict of interest to confuse the issue. Everyone desires to see engineering and industrial standardization promoted. Everyone desires to see a large degree of co-operation in such work among the various societies and between such societies and governmental agencies. Everyone wishes to see fair play, with the recognition of the rights of all, and to discourage the spirit of autocracy either in engineering societies or in government departments. Since we are in full accord as to all the ends in view, it is only a question of method; and when the circumstances are understood alike by all, it is believed that full agreement will readily be reached. The members of the American Engineering Standards Committee have recognized the logic of the situation, and have proposed a wise and generous action.

They have outlined a plan, for presentation to the founder societies, whereby the present organization can proceed with business at once but take in new organizations as they apply and qualify (when the constitution is amended), and when the membership has increased sufficiently to justify it, divide up into divisions and create a smaller Standards Committee with a central executive committee. It will thus gradually become the great national body it should be.

# Post-Payment Center-Exit Car in Philadelphia

P. R. T. Is Trying Out "Public Service" Car Preliminary to Remodeling 1500 Near-Side Cars to Center-Exit Type

THE Philadelphia Rapid Transit Company has in experimental operation a new type of near-side car in which passengers enter by a double passageway on the front platform and leave by a double-door center exit. The conductor's position is at the center exit and all fares are paid as passengers leave. The new type has been christened the "public service" car.

The use of the near-side car, which was introduced as the Philadelphia standard in 1911, practically eliminated boarding and alighting accidents, as both en-

two continuous streams without the interruption due to fare collection and without conflict with outgoing passengers.

Many observations conclusively show that under the pay-leave plan, seven out of nine passengers have paid their fares to the conductor and stand at the exit door ready to alight before the car actually comes to a stop. The plan also offers greatly increased convenience to the passengers who row, instead of waiting to get their fares ready while exposed to the weather, are enabled



ENTERING AND LEAVING PASSENGERS DO NOT IMPEDE EACH OTHER'S MOVEMENTS



CONSPICUOUS ROUTE SIGNS CONDUCE TO PASSENGER CONVENIENCE

trance and exit were by the front platform directly under the supervision and control of the motorman. The perfection of automatic door-control devices, however, by means of which premature starting is prevented until all doors are safely closed, has led the Philadelphia management to consider the practicability of changing the exit to the center and putting the control of the exit doors in the hands of the conductor

### NEW CAR IS A QUICK LOADER

The preliminary operation of the car on a heavy business district line has demonstrated the new public service car with post-payment fare collection to be more than 10 per cent faster in loading and unloading, and there is the added advantage that the times of loading and unloading per average passenger are more nearly equalized. That is to say, under the prepayment plan more time was required to take on passengers than to let them off. By the new method passengers enter in

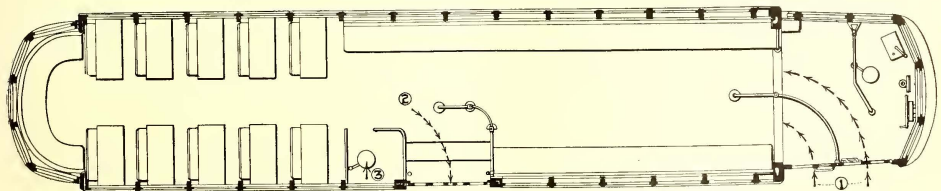
at once to pass within the car and have opportunity to get their fares ready and obtain change and transfers while the car is approaching their destination stop.

### PASSENGERS DISTRIBUTE THEMSELVES WELL

Moreover long-distance riders now find it convenient to occupy the cross seats at the rear of the car, leaving the front for the short-distance riders who occupy the longitudinal seats. The indications are that this will encourage short-distance riding and largely overcome the tendency to crowd around the exit.

The saving in time in loading and unloading will be of direct advantage to the public, as it will enable the company to give increased service with the same number of cars equivalent to the addition of 200 cars because of the saving made possible by the continuance of the skip-stop system.

The exterior of the new public service car is painted a soft Quaker gray, and the interior color scheme is



- ① Passengers Enter at Front by both Doors
- ② Passengers Leave by Center Doors
- ③ Conductor Collects Fare upon Departure of Passengers

PLAN OF THE P. R. T. POST-PAYMENT, FRONT-ENTRANCE, CENTER-EXIT OR "PUBLIC SERVICE" CAR

being worked out to give the effect most satisfactory to the passengers. The car is equipped with wooden seats shaped to give maximum comfort to the passenger of average build.

#### MANY FEATURES OF NEAR-SIDE CARS ARE RETAINED

Ventilation is secured by the method originally introduced in the near-side car, in which the upper sash of the windows are hinged, so that the passengers them-

THE NEW PUBLIC SERVICE CAR			
6213 ON ROUTE 42			
ONE BROAD—EAST ON CHESTNUT		ONE BROAD—WEST ON WALNUT	
10.11 A. M.	1.05 P. M.	11.50 A. M.	2.45 P. M.
11.40 A. M.	2.25 P. M.	1.25 P. M.	4.09 P. M.

**TRY IT**

THIS CARD IS USED IN SECURING CONSTRUCTIVE CRITICISM OF THE NEW CAR

selves can open the sash inward at an angle, permitting the entrance of fresh air without producing a direct draft.

The route number system, introduced by the management of the Philadelphia Rapid Transit Company in 1911, is also retained, and a changeable route number sign is carried on the side of the car as well as on the front.

The new car seats fifty passengers and is practically of the same weight and dimensions as the near-side car.

The sample car is kept in regular operation on a prescribed schedule which has been thoroughly adver-



CONDUCTOR HAS EXCELLENT SUPERVISION OF PASSENGERS ALIGHTING

tised in the newspapers and in a bulkhead sign (reproduced herewith) posted in all of the company's cars. The management is inviting the public to inspect the car and make constructive suggestions, prior to the remodeling of the present 1500 near-side cars, which will be undertaken as soon as the new type has been thoroughly tried out and the need for any further changes determined.

Trackless cars in Stockport, England, are reported not to have been a success, the municipal tramways committee having under consideration the substitution of motor buses for them.

## Price Level Will Stay Up

### General Course of Prices Since Signing of Armistice Points to Establishment of New Price Level

IN ITS EFFORT to give to the public a clear conception of the changed economic conditions of the world and the basic reasons why the country should not hold back in the expectation of a sudden recession of the general price level to the pre-war mark, the National Prosperity Campaign is meeting with a marked response on the part of many leading men. This campaign, as previously noted in these pages, has as chairman of its executive staff P. H. Gadsden, vice-president United Gas Improvement Company. The headquarters are in the Commodore Hotel, New York.

#### INDORSEMENT BY GOVERNMENT LEADERS

An enthusiastic indorsement of the campaign was made this week by Secretary Glass of the Treasury Department before the convention of the United States Chamber of Commerce in St. Louis. Mr. Glass urged that every American citizen act in the spirit of the National Prosperity Campaign, whose efforts for the stimulation of business and confidence have been spread broadcast throughout the country, over the slogan of "LET'S GO." Secretary Glass continued: "We should start right away. We should break in upon this unnatural, abnormal suspension of commercial activities, for there is a world to be rebuilt."

Messages of support have been received from the governors of many states. Activity along the line of public improvements to help the industrial and labor situation is now under way, and there are unmistakable evidences of an earnest desire to assist in stabiliment and adjustment. In the opinion of J. P. Goodrich, governor of Indiana, the country is permanently on a higher price level, and it is idle to talk about getting back to pre-war conditions.

Simon Bamberger, governor of Utah and formerly president of the Salt Lake & Ogden Railway (now the Bamberger Electric Railroad), states that existing prices have not in any way handicapped the State's activities, for the administration keenly appreciates the necessity for prompt action in matters providing employment. "Results," Governor Bamberger says, "are what we are taking into consideration, rather than the matter of a few dollars and cents."

#### HIGH PRICE LEVEL WILL CONTINUE

The sound economic basis for the work of the National Prosperity Campaign has been attested by many leading economists. To what has previously been presented in these pages, however, it seems worth while to add a few of the comments on the price situation recently made by T. S. Holden, investigator in the economics section, Division of Public Works and Construction Developments, Department of Labor. Mr. Holden directs attention to the fact that a comparison of the course of prices during the Civil War and the present war shows many points of similarity, but that the course of prices during the present period of readjustment and the corresponding period following the Civil War shows more points of difference than of similarity.

It was thirteen years after the Civil War before prices returned to the pre-war level. The principal cause of this return was the fact that there was such abundant

opportunity for the development of new and more economical methods of production in the shape of new forms of machinery and new kinds of business organizations. These opportunities, however, are not present now in any measure comparable to the previous period.

From Oct. 1, 1918, to the present time, commodity prices have been going through an orderly process of readjustment. *Dun's Review*, says Mr. Holden, shows that although there have been many declining prices, others have been advancing at the same time. Of 313 commodities quoted on March 8, 1919, 140 were priced lower than a year before and 126 higher, the index figure indicating a reduction in the price level for the year of only 4.8 per cent. The commodities quoted lower consisted of certain foodstuffs, drugs and chemicals, wool, woolen and cotton textiles, metals and oils. With the exception of steel products, no building materials were quoted at prices lower than those last year. The principal commodities priced higher on March 8, 1919, than a year before were certain foodstuffs, lumber and other building materials, drugs and chemicals, hides, naval stores, oils, paint and tobacco.

The most marked declines since the armistice, Mr. Holden notes, have occurred in the case of lake copper and pig lead. In November copper was 69 per cent above the pre-war price, but since then it has dropped to the pre-war level. Pig lead in November was 79 per cent above the pre-war price, but now it is only 17 per cent above it. In both cases the cessation of the war left very large stocks on hand. Both commodities are usually exported in large amounts and there has been no export demand. Consequently, in Mr. Holden's opinion, the considerable decline in prices for these two commodities is not surprising.

Mr. Holden believes, therefore, that in general the course of prices since the armistice seems to bear out the theory that a new price level has been established. In conclusion he says:

After a somewhat extended study of prices, it is the opinion of the Division of Public Works and Construction Developments that a new price level has been established by economic conditions attending the world war; and that economic forces appear to have already acted to stabilize prices at a level below which they are not likely to fall by any appreciable amount in the near future.

It is believed that the growing confidence in the future of business in this country, evidence of which is seen on all sides, is well justified by the facts that have been learned through the study of the price situation.

At the present time there is less concern over high prices than there is with regard to the stability of prices. It appears that the wisest business men are those who decide now to go ahead with the construction of buildings and the production of goods. The need for both forms of activity is more imperative now than ever before.

### Cost of Living Off Only 2.8 Per Cent Since Signing of Armistice

THE cost of living for American wage-earners declined 2.8 per cent between the signing of the armistice and the first week of March, 1919, according to a preliminary statement just issued by the National Industrial Conference Board. In March, 1919, the cost of living was still approximately 60 per cent to 65 per cent above the pre-war level, as contrasted with an increase of 65 per cent to 70 per cent in November, 1918, and of 50 per cent to 55 per cent in June, 1918, according to the board's two previous studies of the subject.

Changes since November, 1918, in the average cost of the different items entering into the budget were:

All items	2.8 per cent decrease
Food	4.1 per cent decrease
Shelter	1.7 per cent increase
Clothing	6.2 per cent decrease
Fuel, heat and light	1.3 per cent increase
Sundries	No change

For the entire period July, 1914, to March, 1919, the changes in the respective items were:

All items	61.3 per cent increase
Food	75 per cent increase
Shelter	22 per cent increase
Clothing	81 per cent increase
Fuel, heat and light	57 per cent increase
Sundries	95 per cent increase

In estimating the change in the budget as a whole the constituent items have the following relative importance: food, 43 per cent of the total; shelter, 18 per cent; clothing, 13 per cent; fuel, heat and light, 6 per cent and sundries 20 per cent. These percentages are averages of the actual expenditures of several thousand families, based on the results of investigations by authoritative agencies. While families differ in the apportionment of their incomes among the separate budget items, the distribution for normal families does not vary widely from these averages. Hence, with any reasonable allocation of items in the budget, changes in the total cost of living are fairly uniform, and an estimate of 60 per cent to 65 per cent as the increase between July, 1914, and March, 1919, is representative.

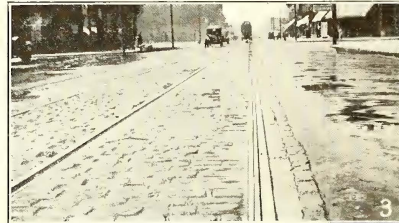
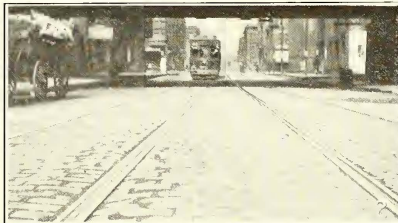
### New England Electric Freight Men Meet at Worcester

THE annual meeting of the New England Electric Freight Association was held at Worcester, Mass., on April 10, at the freight terminals of the Worcester Consolidated Street Railway. R. E. Cosgrove, freight and passenger agent Worcester Consolidated Street Railway, was re-elected president, and F. C. Lewis, general freight agent Boston & Worcester Street Railway, was re-elected secretary.

A committee was appointed to report at the next meeting upon the advisability of extending the scope of the organization to include local agents and representatives of auditing departments. This comprises P. P. Crafts, Bay State Street Railway; A. E. Padlock, Rhode Island Company, and H. R. LaMontagne, Worcester Consolidated Street Railway. It was also decided to hold the monthly meetings in Boston on the same days as those on which the New England Street Railway Association meets, in order to enable members to attend the meetings of both associations.

Among the topics discussed at the meeting was that of further development of the freight business by use of through tariffs with connecting carriers. As this involves the matter of auditing as well as that of operation the discussion will be resumed at the next meeting with auditing specialists present. Another topic was that of automobile truck competition, which was covered by B. F. Curtis, traffic manager Norton Company, Worcester, who demonstrated that the trucking business on the basis of freight rates is a losing proposition. Mr. Curtis believes strongly in trolley freight transportation. H. C. Page, general manager Worcester Consolidated Street Railway, and A. E. Stone, general manager Boston & Worcester Street Railway, expressed their belief that one of the rays of hope in the future of the electric railway business is the possibility of obtaining additional revenues from freight transportation.

## Appearance of Street Surface With Various Types of Track in Chicago



No. 1—Type No. 1, track laid in 1907 with sand cushion

No. 2—Left track type No. 2A, right track type No. 1 both laid in 1907 with sand cushion

No. 3—Type No. 2A, laid with sand cushion in 1907, ties spaced 4 ft.

No. 4—Type No. 2A, track laid with sand cushion in 1909, ties spaced 3 ft.

No. 9—Type No. 4, track laid in 1917 with mortar cushion.

No. 5—Type No. 2A, track laid with mortar cushion in 1911, ties spaced 3 ft.

No. 6—Type No. 3, track laid in 1910, ties spaced 2 ft., outlying district.

No. 7—Type No. 3, track laid in 1909, ties spaced 2 ft., Loop district.

No. 8—Type No. 4, track laid in 1910 with sand cushion.

# Chicago Rehabilitation Track Standards Prove Successful

Five Standard Types Adopted in 1907 and 1909 Promise to Give Long Life and Good Service—Study Made of Rail Corrugation as Influenced by the Several Types of Track Construction—Ninety-two Per Cent of Track Now Standard Construction

UPON reference to old track records of 1905 for the various electric railway lines of the city of Chicago, it will be found that the track foundation at that time was the natural soil consisting of sand and clay and a combination of the two, divided in about the proportions 28 per cent, 16 per cent and 56 per cent respectively. The rail sections were chiefly 6-in., 7-in. and 7 $\frac{3}{8}$ -in. Johnson Company, with 7-in. "trilby," 9-in. Cambria and 9-in. Wharton in a few locations. In the paving granite block, asphalt, cobble and cedar block was used in about the proportions

and the ideal seemed to be a permanent foundation upon which the superstructure could be placed and renewed from time to time as is done with a bridge structure. At about that time the cities of Toronto and Montreal, Canada, had laid some concrete foundation and were placing the rails directly upon this foundation without the use of ties. To maintain the gage, the rails were fastened together with tie rods and the paving was depended upon to hold the track in place. Detroit, St. Louis and other cities had also been experimenting with various forms of concrete beams. None of these

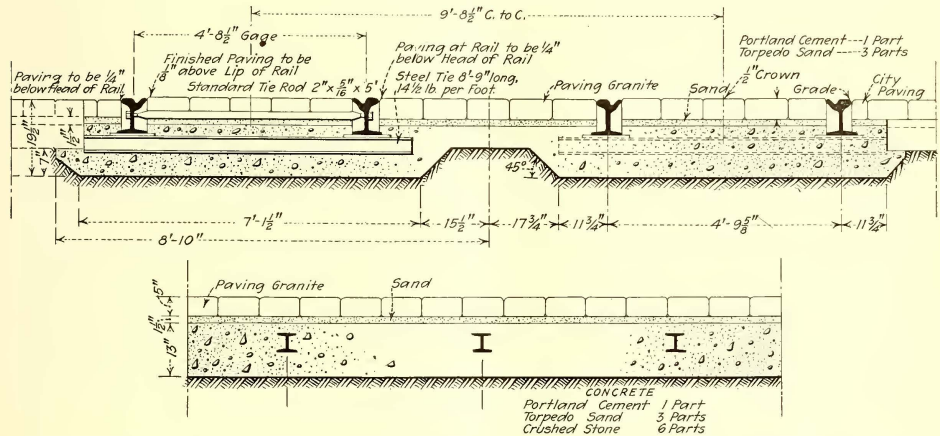


FIG. 1—CHICAGO STANDARD TRACK TYPE NO. 1. NOTE—In accordance with Resolution No. 1251 passed by the Board of Supervising Engineers on June 23, 1909, all new tracks built hereafter, unless otherwise specifically ordered, shall be 10 ft. 2 in. center to center; and all other dimensions on this drawing that will be affected by this increased track center must be changed accordingly. Outside rails to be 4-in. lower than inside rails.

1; CONCRETE FOUNDATION AND STEEL TIES. Pavement to be granite block as specified in the ordinance of Feb. 11, 1907, unless otherwise ordered. On cable construction space ties to the same centers as cable yokes. On all other work space ties on 4 ft. centers. Pavement to be swept with dry gravel only.

22 per cent, 3 per cent, 15 per cent and 60 per cent respectively. Oak ties were used in all cases. These might be said to represent Chicago standards in 1905.

The era of rehabilitation in Chicago began about the year 1907, when a city ordinance was passed providing for a board of supervising engineers. This was to be a non-political body created for the purpose of administering the ordinances by which it was created, which also included provision for the complete rehabilitation of the Chicago railway properties.

As the board desired to begin at the source, or so to speak at the ground, and to work up, the subject of foundation and ties was the first to receive consideration. An exhaustive study was made of this question

appeared to the Board of Supervising Engineers of Chicago to be a type of construction which would insure permanency. Many large cities were visited, including Toronto and Montreal, and the various types of construction were studied. After convincing itself that steel incased in concrete suffers no corrosion the board adopted as its first choice for standard construction steel ties 4 $\frac{1}{2}$  in. deep, spaced on 4-ft. centers and imbedded in concrete slab foundation 13 in. thick of which 6 in. is below the ties.

Investigation also developed the fact that a wood tie in the best condition is greatly preserved when incased in concrete, and the second choice adopted as a standard was construction involving thoroughly dry,

sound, 90 per cent heartwood yellow pine, untreated ties, 6 in. thick, spaced at first on 4-ft. centers and later reduced to 3 ft., and incased in concrete to a total depth of 14½ in., 6 in. of which is below the ties. To protect the wood tie from the wear of the rail, tie plates were incorporated in the standard construction, as was also the screw spike, to facilitate renewal of rails and plates.

At this time the subject of tie treatment also received broad consideration. The zinc chloride process

The above are the three main standards of foundation and ties used in Chicago. In some of the outlying districts where all improvements, such as sewer, water and gas have not been installed, two other types of track are permitted. The first is 8 in. of slag ballast with wood ties laid upon it and concrete placed between and over the ties to a total depth of 7½ in. The second is 12½ in. of slag ballast in which wood ties are imbedded to a depth of about 5 in., with 8 in. under the tie, and over which is placed 4 in. of limestone. These

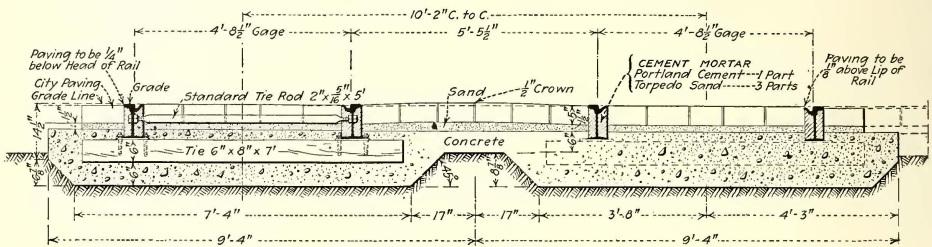


FIG. 2—CHICAGO STANDARD TRACK TYPE NO. 2A; CONCRETE FOUNDATION AND WOOD TIES

was recommended by authoritative engineers, in consequence whereof a length of test track was constructed incorporating this class of treated tie. It was found, after the track had been in service some time, that many of the rail spikes had been eaten away until they were no larger in diameter than a pencil. This trouble was studied carefully with the assistance of chemists and it was found that the moisture in combination with the zinc chloride produced a chemical galvanic action with the liberation of hydrochloric acid and the formation of free chlorine. Thus the decision was reached that for a moist climate the treatment of ties with chloride of zinc was a failure and during the first year of the existence of the board all such treatment was dispensed with.

For various reasons a solid concrete foundation is not always desirable nor even feasible, so another standard foundation to be used in conjunction with that of solid concrete was sought. As it was desirable to retain

two types of foundation are very little used. In addition to these five standard types of foundation the concrete slab sub-ballast type has been used in a special case to overcome conditions created by necessity for construction over a new deep and wide fill. This was described in the ELECTRIC RAILWAY JOURNAL for March 30, 1918, page 609.

The rail section adopted as standard for the first three types of foundation described was a 9-in., 129-lb. grooved girder rail. This type is used in nearly 90 per cent of the track in Chicago. For the slag concrete foundation a 7-in., 91-lb. T-rail is used, and with the slag limestone foundation, a 7-in., 80-lb. modern improved girder rail.

PAVING LAID ON DRY MORTAR CUSHION

The greatest element that contributes to the destruction of paving is water. Consequently that pavement which has the longest life and which is best for the

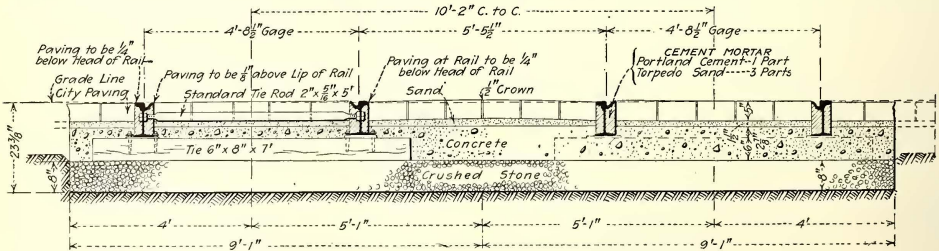


FIG. 3—CHICAGO STANDARD TRACK TYPE NO. 3; CRUSHED STONE WITH WOOD TIES IMBEDDED IN CONCRETE

the permanency feature, it was practically necessary to use concrete in the surface of the foundation for tie protection and to provide a paving base. Thus the third standard is 8 in. of crushed stone ballast rolled on a rolled earth subgrade. The same standard wood tie is placed upon this, spaced on 2-ft. centers, and concrete is placed between and above the tie to a total depth of 8½ in. About 27 per cent of the present track construction is of this type.

public use is that most nearly water-tight. In Chicago, therefore, the granite-block pavement has been adopted wherever its use is possible, and it is standard for all types of construction and foundation. In some of the construction in outlying districts, on streets where improvements are not made and where vehicular traffic is light, the use of vitrified brick paving or granite screenings for surfacing is permitted.

With the granite block paving the city specifications





total depth of 14½ in., 6 in. of which is below the tie. Upon the tie, under each rail, is a shoulder tie plate, 7½ in. wide, 9½ in. long and ½ in. thick, fastened to the tie with two ¾-in. x 2½-in. fetter thread lag screws. The shoulder of the plate against the outside edge of the rail base and the rail joints are electrically welded as in Type 1 and the rails fastened by screw spikes. Tie rods and paving for Type 2A are the same as for Type 1.

In Type 3 (Fig. 3) the track consists of the same rail section, ties, tie plates, rail fastenings and tie rods as in Type 2A, but the ties are spaced on 2-ft. centers and rest upon 8 in. of 1½-in. run of crushed stone foundation rolled on a rolled earth subgrade. Concrete of the same proportions as in Type 2A is placed between and above the ties to a total depth of 8½ in. The paving for Type 3 is the same as for Type 2A.

The track for Type 4 (Fig. 4) consists of 7-in., 91-lb. modern Shanghai T-rail, supported on wood ties as in Types 2A and 3, resting upon 8 in. of furnace slag broken to pass through a ring 6 in. in internal diameter, covered with fine slag, limestone screenings, cinders, rolling-mill ashes or foundry sand to fill all interstices and rolled with a 10-ton roller. Concrete is placed between and over the tie to a total depth of 7½ in. Upon every other tie and under each rail is a tie plate, 6 in. x 9½ in., fastened to the tie, when used with screw spikes, by the same lag screw as in Types 2A and 3, and when used with track spikes with two ¾-in. x 2½-in. hook spikes. Upon every other tie and under each rail is placed a 7½-in. x 10-in. malleable-iron brace tie plate fastened to the tie by either lag screws or hook spikes as above. These tie plates and braces have an inclined upper face which cants the head of the rail slightly toward the center of the track for the purpose of causing the wheels to bear nearly over the centers of the webs. Rail joints are electrically welded by the Lorain process as in other standards. Upon the concrete is placed the dry mortar as in previous types, except that the cement mortar rail filler also extends back from the rail some 10 in., and upon this are placed repressed vitrified paving brick not less than 8 in. long, 4 in. deep and 2½ in. thick, with grouted joints.

In Type 5 (Fig. 5) the track consists of 7-in., 80-lb. modern improved girder rail, supported on the same tie as Types 2A, 3 and 4, imbedded to a depth of 4½ in. in 12½ in. of the same class of slag as in Type 4. The same flat tie plates and brace tie plates are used as in Type 4, with hook spikes. Rail joints are bolted for temporary construction, but if the construction is more or less permanent, they are electrically welded. Upon the slag is placed 4 in. of 2½-in. ring limestone, covered with limestone screenings to fill the interstices. Upon this is placed, between rails, 3½ in. and between tracks and outside tracks 4 in., of 3-in. ring granite covered with ½-in. of ½-in. granite screenings flooded and rolled.

#### STUDY IS MADE OF RAIL CORRUGATION

In connection with the above standards an extensive study has been made of rail corrugation, as described in the ELECTRIC RAILWAY JOURNAL for Nov. 21, 1916, page 1012. Many authorities attribute corrugation to a rigid foundation, but this is certainly not the full explanation, for in Chicago corrugation has developed on both the concrete and the crushed-stone foundations.

The crushed stone might be termed a semi-rigid foundation, as it would be less resilient than sand or gravel or even slag, but no concrete is placed beneath the ties and that between them does not always give rail support. Also, in the same stretch of track on a concrete foundation, part of the rail will show corrugation and part will not.

On the other hand there has been an interesting test of a sand foundation. At a certain location in Chicago, due to the sewer program of the city which called for early improvements, some track was laid on a sand foundation only. At a little later date the sewerage work was completed on part of this street and the adjoining track was placed on a concrete foundation and paved while the remainder was left on the sand foundation. Some corrugation soon developed in the track placed on the concrete, while that on the sand continued immune. Concrete is now being placed between and over the ties on the sand foundation and a careful study of results is being made.

This experience would cause many to jump at once to the conclusion that the mystery of the cause of rail corrugation had been solved, but such is not the case. In fact, the Chicago authorities are inclined to believe that the relation of the tread of the wheel to the contour of the rail head, truck nosing, off-center gear drive, etc., are contributing factors in the formation of corrugation. Study is being made on the effect of changing the contour of the wheel. Investigation is also being carried on in respect to new track to detect the first indications of corrugation.

If in the end it should be determined that corrugation is caused by a rigid foundation, the question still remains as to which is the greater of two evils—no corrugations and a poor foundation which will not hold up the paving and will thus allow water to leak in and soon destroy the paving altogether, or a rigid foundation with firm smooth grouted paving which is water-tight, but which creates a necessity for handling the corrugations in some other manner.

#### STANDARDS GIVE LONG LIFE AT LOW COST

As far as can be determined, the Chicago standards have proved very successful and the indications are that a comparatively long life will be obtained from the track. Of course on practically any track that has been in service for any considerable length of time certain locations can be found where on the face of the appearance the construction might appear to be a failure. A study of these particular instances may show that unforeseen local conditions have contributed to the failure and that the standard in principle is satisfactory. The fact that during the past eleven years it has not been found necessary to change these standards is proof in itself that to the Chicago authorities at least the standards seem highly satisfactory. As mentioned in the foregoing text, some little trouble was experienced with the paving, but the adoption of a dry mortar cushion and filling of the interstices with grout seems to have eliminated this difficulty.

The standard used in any piece of construction depends largely upon the local equation, the condition of the subsoil, *e.g.*, whether wet, dry, firm or sandy, the type and amount of traffic both car and teaming, the possibilities of excavation being necessary in the near future, etc. A great deal of the construction in the Loop district, the main business center of Chicago, is Type 3. The reasons for this are two. The first

is that for many years a subway construction in this district has been an imminent possibility and in the track reconstruction made necessary, it would be much easier to break up a bed of concrete  $8\frac{1}{2}$  in. thick than one 14 $\frac{1}{2}$  in. thick. The second is the difficulty of constructing Type 2A under traffic.

Altogether since 1907 about 719 miles out of 803 miles of track have been rehabilitated and 192 miles of new track constructed. This shows that 92 per cent of the total surface mileage outside of yards is now standard construction. Of this standard construction the percentage of each of the five standard types now in use is about as follows: Type 1, 1 per cent; Type 2A, 58 per cent; Type 3, 27 per cent; Type 4, 9 per cent; Type 5, 5 per cent.

The photographs on page 864 show the present condition of track of the various standards.

## The Proposed Ford Light-Weight Car No Likelihood That It Will Be Out of the Test Stage for at Least a Year — No Decision Even as to Commercial Manufacture

WHEN Henry Ford announced early in April that he was prepared to build an extremely light-weight car for gas drive, a representative of the ELECTRIC RAILWAY JOURNAL immediately called upon him and upon Charles E. Sorensen, general manager of Henry Ford & Son's tractor plant at Dearborn. In this interview, as reported in the April 19 issue, Mr. Ford expressed his belief in a greater field for transportation on rails if city railways would use light cars operated at more frequent intervals and, where feasible, make use of a graduated fare. He also stated in this interview that the same principles of light-weight construction proposed for his gas car could be incorporated in an electrically-driven car.

Since the foregoing discussion Mr. Ford has given further proof of his purpose by securing franchises for the operation of a street railway to connect his tractor plant at Dearborn with his blast furnaces and ship-building plant on the Rouge River, a distance of 5 to 6 miles. The plants, of course, are gradually being surrounded by the homes of the workers, but more of the men would settle near their work if better transportation were furnished. The terms of the franchise call for operation with either gas or electrically-driven cars within one year. In any event, this undertaking to build a railway is most significant as coming from a man who has done more than any other individual to make the automobile cheap and popular.

### CAR ITSELF IS STILL IN THE GASEOUS STATE

While the statements made by Mr. Ford to the public of Detroit and the franchise application described indicate that Mr. Ford is in earnest, it is a matter of vital importance to the street railway industry to know that there is no early prospect that the car itself will be available. What follows on this subject is based in part upon the interview with Mr. Ford on April 15 and with Mr. Sorensen on April 23.

In the first place, Mr. Ford has no present intention of going into the business of building street cars. His chief desire is to prove that a car of extremely low weight but powerful construction can be built by using high-grade steels and alloys similar to those developed for the severe conditions that have to be met by a

tractor. He proposes to take his time to make any necessary experiments so that the completed car will not have to be tinkered with. Once he has attained his ideal, he may be willing to turn over the mass production of the car to any "live wire" in the business who has the faith to produce in large quantities at low prices.

In discussing the matter with Mr. Sorensen it was brought out that one-man operation would be an essential if the car was to be an economic success. Further, the moment it was operated as a one-man car, it would necessarily have to be equipped with a variety of automatic safety appliances that would meet the approval of the railways themselves, the car operatives and the regulatory bodies. As an example, the history of the Birney safety car was cited. That car had been the first to deserve the name "standard" because of the very feature, lightness, that was to be so important a characteristic of the Ford car. Yet despite its manifest advantages and great success, much opposition had to be overcome since the car had been brought out four years ago. After Mr. Sorensen had examined views of a number of safety car installations he said that if the Birney car could be made of material still lighter and better it would never be able to catch up with the orders.

### ANY DRIVE CAR WOULD HAVE TO BE OF SAFETY TYPE

With regard to the Ford street car development, which would supplement rather than injure the good work done in electric car design in recent years, Mr. Sorensen said that this company would certainly look into the use of every device that would promote both safety and economy, such as the inter-operation of brakes, doors and steps. He knew that Mr. Ford would insist upon the best even down to such a detail as air-brake piping because the best piping was not merely the lightest but also the piping that could be made airtight most readily. Absence of leakage meant a smaller compressor. Matters like that were not to be left to the choice of the purchaser. It was up to the manufacturer to see that the customer was started right instead of being permitted to use something that was costlier in the long run.

The Ford car would have ball bearings everywhere. At the same time the company realized that such bearings are subject to severe conditions in electric railway service so that it deems better balls a necessity. Mr. Sorensen showed some balls of outside and home manufacture which had been tested to see how good a ball it really is possible to produce. He maintained that neither for the tractor nor for an electric car could ball bearings be any too good. They would be particularly valuable to insure low resistance in starting.

At the present writing not even the size of the car has been fixed.

There would probably be from fourteen to sixteen double seats, or a little less than the Birney. To make the proposed high rates of acceleration and braking comfortable, these seats would be more like automobile than car seats. The trucks would probably be made of pressings. All axles would be driving axles, driven by the engine through worm gearing. The size and character of the engine was still a matter of doubt, although Mr. Sorensen pointed out that the engine of the Fordson tractor uses gasoline only for starting, kerosene being the fuel used in running.

# Chamber of Commerce Shows Appreciation of Electric Railway Situation

At Meeting Held in St. Louis on April 28 to May 1 the Plight of This Utility Was Clearly Set Forth and an Appropriate Resolution Was Adopted—P. H. Gadsden Was Elected a Director

THE outstanding feature of the meeting of the Chamber of Commerce of the United States, held this week on April 28 to May 1 in St. Louis, from a public utility point of view, was the presentation of the needs of the electric railways of the country. The attendance of representative business men from all sections was large, and the evidence presented of the necessity of the electric roads for greater income if they are to supply the needs of good service was convincing. At the same time there was convincing testimony of the vital connection between good local transportation facilities and the industrial life, comfort and prosperity of the communities served.

The public utility program at the convention was initiated by a report to the council of its committee on public utilities. This committee, whose appointment was mentioned in the issue of the *ELECTRICAL RAILWAY JOURNAL* for Apr. 19, 1919, page 792, consists of the following:

Lewis E. Pierson, Irving National Bank, New York, (chairman); Henry G. Bradlee, president Stone & Webster Management Corporation, Boston, Mass.; Arthur W. Brady, president Union Traction Company of Indiana, Anderson, Ind.; F. B. DeBerard, director of research, Merchants' Association, New York; P. H. Gadsden, vice-president United Gas Improvement Company, Washington, D. C.; E. K. Hall, Electric Bond & Share Company, New York; Albert W. Harris, president Harris Trust & Savings Bank, Chicago; Charles L. Harrison, Chief of Ordnance, Cincinnati District, Cincinnati, Ohio; J. W. Lieb, vice-president New York Edison Company, New York; P. W. Myers, president St. Paul Association of Public and Business Affairs, St. Paul, Minn.; James S. Havens, Eastman Kodak Company, Rochester, N. Y.

The report of the committee on public utilities follows in full:

## REPORT OF SPECIAL COMMITTEE

"The public utilities which you have asked this committee to study have a fundamental place in the communities of the United States. They furnish the very requisites of business activity and of community life—heat, light, industrial power and local transportation. The dependence of our towns and cities upon these public services for all the processes of production and distribution, as well as for the activities of modern daily life, is so complete that the national welfare is at stake when a condition which threatens entire paralysis spreads throughout the units of any of these utilities.

"Such a condition inimical to the whole public now exists as to street railways. The emergency is so immediate that the committee at once makes this report with respect to street railways.

"Subject to peculiar limitations which do not apply

to the same extent in the regulation of other utilities, street railways have been unable to increase their income to conform with the growth of their expenditures. Private industries have found a way to increase prices to meet their increased costs for wages and materials and changed conditions of credit. Public utilities do not possess this freedom of action. This has developed a critical situation in the street railway industry.

"This problem is common to every community in all parts of the country and therefore has become national in importance. It is a most urgent problem of the readjustment period. The danger increases day by day. In March 10 per cent of the mileage of the street railways of the country was in the hands of receivers. By the middle of April the proportion had already increased to 12½ per cent. Furthermore, many companies not yet formally declared bankrupt are in fact insolvent when gaged by any ordinary business standard.

"Wholly apart from the interests of street railway companies themselves, such a situation threatens disaster to every community. It means that a public service around which homes and industries have been built lacks means to provide the service which these communities require for their daily life. It means, too, that employers of a large body of workers cannot without relief continue to pay an adequate wage in a period of great increase in the cost of living. It means also that some of the largest users of the products of manufacture are without the ability to make purchases necessary to their maintenance and extension at a time when such purchases are vital to the resumption of our manufacturing industries.

"To your committee it appears that the time has come for a thorough examination of the functions of street railways, of the relations street railways bear to the public, and of the measures which should be adopted to guarantee the public an adequate service. An entire reconsideration is needed. In such a re-examination it may appear that a remedy is not to be found merely in an increase in fare, but that there may be other ways of reaching a solution of the problem.

"Whatever the causes leading up to present conditions, the remedy can now be found only if there is a widespread knowledge respecting the proper relations between street railways and the communities they are called to serve. At present there is no such general information and understanding of these problems which affect the daily life of every citizen, whether he be an employer or an employee, a merchant or a manufacturer, a city resident or a dweller in a suburban home.

"Upon considering the importance of this subject, and ascertaining the circumstances which we have attempted to suggest briefly in outline, we have concluded to present to you three recommendations in contemplation of the immediate action which is necessitated by the emergency:

"1. This committee should be continued and authorized to hold hearings at which it may invite information and suggestion from persons representing different interests and diverse points of view and who can contribute toward solution of the problem.

"2. After holding hearings and completing studies as expeditiously as possible, this committee should be authorized to present to the board of directors a report setting out recommendations with respect to the principles which should be adopted in undertaking to solve the street railway problem; this report might then serve as the basis for a referendum vote among all the organizations in the membership of the Chamber of Commerce of the United States.

"3. Meanwhile, organizations in the membership of the Chamber of Commerce of the United States should be requested to co-operate with this committee in developing information which the committee may need in reaching its conclusions."

#### ADDRESSES ON TUESDAY AFTERNOON

The Public Utilities Group held its first meeting on Tuesday afternoon at the Missouri Athletic Club. Lewis E. Pierson, chairman committee on public utilities, Chamber of Commerce of the United States, presided and explained that at the meeting on Wednesday afternoon the committee would be glad to hear from any persons interested in the subject, or to receive any questions which any person might desire to hand in. He then introduced as the first speaker Samuel W. Fordyce, Jr., St. Louis, Mo., former counsel of the War Finance Corporation.

Mr. Fordyce first gave a brief history of the work of the War Finance Corporation, so far as it related to electric railways. He said that much had been expected of the corporation when its organization was first announced, but a closer inspection of the act showed that public utilities could take advantage of it only under Section 9 and had (1) to prove that they were unable to get funds through the regular banking channels or from the public and then (2) they had to give adequate security for the loan. The former was not difficult, but the latter was a stumbling block. The value had been there, but it had gone. The corporation made some loans, but several of the companies to which it had made these loans had since gone into the hands of receivers, like the properties in Brooklyn, St. Louis and New Orleans. Under the law, bankers could also borrow to assist utilities, but the conditions were so arduous as practically to preclude this assistance. The thought was then considered of organizing a banking corporation with \$100,000,000 capital, but as it was held that this corporation could not lend more than 50 per cent of its capital to one industry, a system of a group of banks was considered. The armistice ended this work.

From his experience gained with this corporation Mr. Fordyce had concluded that the street railways were "broke" and had been for some time, and he did not think that any extended financing could be done. Every economy had been put into effect and he did not consider that over-capitalization was the cause. Help must now come from the outside, but it was questionable how far utilities could compete in the sale of their bonds with municipal and government bonds. For the large lenders, the tax exemptions features of the government securities made a strong appeal so that the utilities

could compete only for the loans of those with small means. He believed a possible solution would be a congressional act by which utility bonds would be put on the same basis of tax exemption as municipal bonds. This is one way in which the federal government could help, as the United States now has no power to fix rates. The conditions of the last few years have shown the necessity of a flexible rate and that could be granted only by the municipal or state bodies. During the war the corporation had made a loan to the New Orleans property with the provision that a 6-cent fare should be granted but had been unsuccessful in similar interviews with the officials of other cities. Another effort of the corporation had been to persuade present holders to renew their loans in whole or in part on maturing issues, but this had been successful only in part. He said that the corporation had received very few applications from companies using hydroelectric power.

He thought it would be very helpful if the President would appoint a commission containing representatives of the Departments of Commerce, Labor and the Treasury, the utility commissioners, the mayors and the railway owners, with power to make an investigation into the causes of the present conditions. Findings from such a commission could be used with municipalities to prove to them that the situation was of national importance and also to destroy the psychology of the nickel. This he suggested as preparatory to a possible change in the income tax law. He also suggested that if the War Finance Corporation could be continued as a peace agency it would be helpful, although this could be accomplished only by congressional act. The only other alternative was to sell out to the municipality.

In answer to a question, he said that the service-at-cost plan was a good one, but it took time to work it out and would not meet the present situation. He referred to the extensive holdings of utility securities by insurance companies, savings banks and other investing institutions as emphasizing the importance of national action.

#### TELEGRAM FROM INVESTMENT BANKERS

At the close of Mr. Fordyce's address, the chairman read a telegram received by the committee from William G. Baker, Jr., president of the Investment Bankers' Association of America. After regretting that it was impossible for the association to have a representative present at the meeting, Mr. Baker said: "So that your body may be advised as to the position of our association on the problems confronting the street railways, I would advise that we have recommended to the Department of Labor the early appointment by the President of a federal board on street railway conditions, on which there would be representatives of the United States Department of Labor and other interested departments of the government, of the street railway companies, of the American Bankers' Association, of the Investment Bankers' Association of America, of the Chamber of Commerce of the United States, and of the National Association of Public Utility Commissioners, with adequate statistical and clerical assistants, for the investigation of the facts concerning street railways and the reasons for their present condition, and with instructions to state the principles which should govern the proper relations between the street railways, their employees, the car riders and the public generally, in order that the people may have adequate transportation at fair

rates, the rights of the people may be fully protected, the investors in street railways may be protected against loss and new capital may be provided to meet the increasing demands upon the transportation systems in the interest of industrial growth of the communities served and the health and welfare of urban populations."

After the appointment of a committee on resolutions, Chairman Pierson introduced the next speaker, Hon. William D. B. Ainey, chairman Public Service Commission of Pennsylvania. An abstract of his paper will be found elsewhere in this issue.

#### ADDRESS BY MR. WADE AND RESOLUTIONS

The final speaker was Festus J. Wade, president Mercantile Trust Company, St. Louis, who said that forty-two years ago he had been a driver on a bobtail street car when a "long" day consisted of eighteen hours and a short day of "twelve" hours and his daily wage was \$1.75. He criticized the early financial history of many of the electric roads and believed that because of it the investors had lost faith. He thought that the employees could be a great help in explaining the present situation to the public. He also suggested that railway mortgages should provide a fund by which they would be retired within a reasonable term of years. He also suggested the distribution in the cars of leaflets to patrons telling about the existing railway problems. In answer to an objection that his plan of amortization would cast the burden of amortizing the property on the present riders, he thought that the plan would make up to some extent for allowances for depreciation. In a reply to an inquiry as to whether valuations did not overcome the criticism of overcapitalization, he believed that rates based on a fair valuation were proper.

At the conclusion of Mr. Wade's remarks the committee on resolutions of the public utility group drafted a set of resolutions which under the procedure of the Chamber were duly submitted to the main committee on resolutions.

#### ELECTRIC RAILWAY FACTS ARE PRESENTED

The proceedings on Wednesday afternoon took the form of a hearing at which all of the members of the Public Utility Committee of the Chamber of Commerce presided. Those who presented extended evidence included Harlow C. Clark of the American Electric Railway Association staff; R. A. Leussler, general manager Omaha & Council Bluffs Street Railway; Ralph S. Bauer, of Lynn, Mass.; a banker from Seattle, Wash.; a member of a city improvement association in St. Paul, Minn., and A. L. Faber of the Westinghouse Electric & Manufacturing Company. Walter A. Draper, Cincinnati, Ohio; Horace Lowry, Minneapolis, Minn., and H. H. Crowell, Grand Rapids, Mich., also spoke. The testimony brought out the necessity of greater income for the electric lines. A more extended report of this hearing will be published next week.

#### CHAMBER PASSES IMPORTANT RESOLUTION

On Thursday morning the full Chamber unanimously adopted the following resolution presented by its committee, as referred to above in the report of the Tuesday session:

"Street and interurban railways have such a fundamental place in all important communities, and conditions of war have disclosed such acute situations in the affairs of this class of public utilities that the Cham-

ber's committee on public utilities should proceed with its hearings and studies to the end that it may soon place before the board of directors a report with commendations respecting the procedure which should be followed to place these important facilities upon a basis which will assure their efficient service."

At the Thursday session, which closed at one o'clock instead of the end of the afternoon, as planned, P. H. Gadsden was elected a director of the Chamber from Charleston, S. C., and Lewis E. Pierson was re-elected a director.

## Railways Cannot Afford to Lose Riders\*

### No More Fruitful Subject for Local Study Than That of "Selling" Rides Along Modern Merchandising Lines — Operating Improvements Should Not Be Ignored

BY WILLIAM D. B. AINEY

Chairman Pennsylvania Public Service Commission

I CONFESS to a deep interest in the problems confronting electric railways. It is not that I am armed with an answer satisfactory to myself that leads me to speak now. If I shall succeed in giving assurance that I approach these problems sympathetically, that I am cognizant of their serious character and that as a member of one of the state regulatory bodies I earnestly desire to render helpful assistance to the railway interests of my State, I shall have established in part, at least, a working basis justifying my address.

We can agree that the soaring costs of labor and materials have imposed a heavy additional burden upon the revenues of electric railways, and that this has occurred simultaneously with the closing of the ordinary avenues of credit, financing thus being made difficult if not impossible. Net earnings have often disappeared between the upper and lower millstones of a most serious situation. That this has caused these companies grave anxiety of mind and perturbation of spirit was and is a necessary consequence of these conditions.

We are informed that the operating returns for electric railways for 1918, as compared with 1917, showed an increase of but 6.45 per cent, while the expenses for the same period increased 16 per cent. In December, 1918, their operating expenses had increased 23 per cent over the same month in 1917, with a resultant falling off in net revenues of 4 per cent. These figures are without doubt startling.

The accentuation is no less when we remember that these figures cover a period when many railways had increased their fares from 5 to 6, 7, 8 and in some instances 10 cents. So largely do these increased rates enter into the computation just submitted that thoughtful people are beginning to doubt whether, in general, these fare increases will give the relief which the companies must have.

#### PARTICULAR CASES MUST BE STUDIED

I venture now the suggestion that there is no general answer to be found applicable to all companies, to all localities and to all operating conditions. The sooner we get away from too much generalization and devote

\*Abstract of address presented before the public utility group of the United States Chamber of Commerce, St. Louis, April 29, 1919.

our time to the study of particular cases, the quicker we shall find our separate answers, when satisfactory answers are possible.

If our minds are to pursue the channels of right and logical thinking, we are bound to recognize the truth of the following:

First: That electric railway service, particularly urban service, differs fundamentally from that of railroads, and certainly from all water, gas, etc., utilities. It is a service in which a large share of the customers have the right of election as to whether they will walk or ride, with the jitney and automobile as alternatives. Railroads are not so subject. There is then a much closer relationship between the rate of fare and the riding habit than is found with other forms of transportation. The revenues of electric railways are to a very appreciable extent dependent upon a public willing to pay the imposed rates.

Second: To speak particularly of Pennsylvania, no two companies have the same corporate history. In rare instances have their lines been constructed under similar conditions. There are wide differences when we consider the localities served. There are topographical and geographical variants and differences with respect to congestion of population, and even with respect to the riding habits of particular localities.

When the people of Scranton oppose an 8-cent fare, they are likely to point to Philadelphia with a 5-cent rate; when the Pittsburgh company desires a 7-cent rate, it is easy to point to Boston. It is neither logical nor scientific to predicate a rate schedule upon such comparisons, unless the conditions are shown to be similar, and they are rarely comparable. If there ever was a time when each electric railway needs the most careful self-analysis, it is now.

#### RATE OF FARE SHOULD ATTRACT TRAFFIC

There are certain essential factors to be considered. In the first place, there is an intimate relation between the fare and the riding habit. I am sure we are agreed that the public is entitled to receive adequate service at a rate generously sufficient to meet operating expenses, provide a reserve for depreciation and yield a fair return. You might be inclined to state the proposition conversely, but the result would be the same.

We might place the primary emphasis on service and you upon revenues. Either is correct unless the other is ignored. Here, then, is a fair balance which we must strive to maintain. A rate of fare should be high enough to provide adequately for the company's needs and low enough to attract car riders to produce that revenue. The over or under emphasis of either of these postulates distorts the vision and disturbs accurate thinking. A rate of fare so high as to cut off a material part of the patronage will result ultimately in disaster to a company just as certainly, if not so immediately, as a rate of fare too low to produce the required revenue.

#### SOME CHOSE "THE EASIEST WAY"

In many instances a higher fare to provide increased revenues has been prescribed, based upon a purely mathematical hypothesis, ignoring the psychological and other considerations which enter very largely into the question as to whether it would be paid by the car riders. The results have not followed arithmetic and have been serious and perhaps disheartening. May

it not be that under the pressure of immediate necessity some companies have chosen the easy pathway of least resistance.

I cite you an instance. A company, with an annual riding patronage of approximately 29,000,000 two years ago, increased its rates from 5 cents to 8 cents with loss in car riders of at least 6,000,000 fares. A total of 23,000,000 riders at 8 cents yields slightly more than 26,000,000 at 7 cents, or 29,000,000 at 6½ cents.

In one of our large cities a railway had an annual patronage of 263,000,000 carried at 5 cents. To increase its revenues it increased its fares to 5½ cents (two tickets for 11 cents), and shortly after readjusted its rates by establishing an inner zone in which it anticipated no increase in riding habit, but in which its studies predicted patronage on a 5-cent fare at the rate of 63,000,000 annually. An outer and overlapping zone was created, this containing industries from which an increase in riding habit might have been expected. There was applied to it a 7-cent rate applicable also to riders between the two zones. It was anticipated that there might be a falling off of 10 per cent from the total of 200,000,000 theretofore riding in it. Actual experience, over perhaps not sufficient length of time to furnish a conclusive answer, showed in the inner zone (5 cents), a material increase in riding (73,000,000 riders) per year, while in the 7-cent zone the loss exceeded that anticipated by sixteen to seventeen millions (163,000,000 riders).

The social, industrial, financial and economic wellbeing of our country is ineradicably interwoven with the prosperity of the electric railways. Hence I view with great anxiety any plan which results in a large proportion of the public ceasing to patronize these roads. Such a situation is not wholly different from that which would arise if merchants were to burn up 15 to 25 per cent of their stock of goods and attempt to recoup on the 75 to 85 per cent of goods remaining. Surely there is a sense in which the car riders in any community are the railway's "stock of merchandise." As the curve of loss in patronage heightens appreciably as the rate of fare mounts from 5 to 10 cents, we must determine as best we may in each locality where and when the danger point is reached.

#### LACK OF MERCHANDISING IS INEXCUSABLE

In the second place, the old-time policy of electric railways was based upon the conclusion that the profits were in the fully loaded cars, but the modern conception seems to be a lessening of the number of car riders at an increased rate. The railways cannot afford to surrender these car riders. The success of the railway business is to be measured in terms of the retention of such riders.

Electric railways should give more attention to merchandising in order to increase the carriage of passengers. With car rides to sell, every empty seat is a potential loss. To my mind there is no more fruitful subject for local study than is involved in this suggestion. Why it is not more generally followed, I cannot conceive. That satisfactory results would flow from a judicious handling of the situation in this respect would seem to be as certain as the sequence between advertising and the sale of goods by merchants. To attract car riders, whereby the unfilled cars may be filled, is a business proposition which the electric railways cannot afford to ignore. How and when and where

must be answered by each company in the light of local conditions and opportunities.

The value of public approval is a merchandising asset to the railway as it is to the business man. In a peculiar sense retailers are dependent upon the railways, and these merchants should possess sympathetic ears. But can their friendly interest be obtained when such large proportions of car riders are lost to them as potential customers? They are, however, in a very influential position in influencing, directly and indirectly, public sentiment. They have ready access to the newspapers, to whose success they materially contribute and which in turn mould the public opinion.

Local Chambers of Commerce, if they will investigate and fearlessly announce their views and positions, are in places of strategic importance in shaping that opinion. And if electric railways will unite with them on a policy which involves two propositions balanced against each other (retention, yes increase of car riders, and adequate revenues to meet each company's needs) much of the local difficulty will be removed.

It is true that railways have difficulties which merchants have not. But it is true, it is imperative, that railways should take, with wisdom, a page from the methods and experience of merchants and build up a part at least of their requisite increased revenues out of patrons now being lost to them and out of others which the growth of the country would under different circumstances probably provide.

#### ZONING A FRUITFUL FIELD FOR STUDY IN LIGHT OF LOCAL CONDITIONS

It has come to my attention that one company is putting experts on the streets to observe the movements of the people and to devise methods of attracting passengers to the cars. To that end special tickets or commutation tickets are being considered.

The zoning problem, particularly in interurban service, is a fruitful field for local examination, but zones should be so arranged that car riders will be attracted rather than repelled. In some instances the present zones for single fare areas are entirely too long. I have noted one instance of 16 miles for a single fare. Whenever it costs more to carry a passenger than is paid by him, a burden is placed not only upon the company but upon other riders whose rates must be higher to make up the deficiency.

It cannot be denied that a flat increase of fare loses the short distance rider and retains the rider whose ride is less remunerative, or perhaps not remunerative at all. The experiment of zoning with an initial rate for the first zone traveled and a less rate for each succeeding zone, has elements of justice and equality to support it. But here, too, the answer must be found in the light of local conditions, and not in the prescription of a uniform policy.

#### DO NOT OVERLOOK OPERATING IMPROVEMENTS

I shall not undertake to speak specifically of operating studies, lighter cars, one-man cars, etc., but in the light of pressing conditions, such subjects cannot prudently be overlooked by operating officials of electric railways.

I am not at all convinced that we can afford to dispense with electric railway service. No other, better or more certain method of local passenger transportation has been devised. Such a service is entitled to have

the fullest public support and to receive, at the hands of the public, revenues sufficient for its efficient maintenance.

I have not attempted to enunciate a commission policy, for I firmly believe that commission regulation cannot be a success or be of permanent public benefit if it interferes overmuch with the right of initiative which must and ought to be lodged with the utilities of the country.

The foregoing observations are those of one who from the outside has noted with some anxiety the trend of certain policies, and among them that increased rates of fare have not in all or in many instances resulted in anticipated increases in gross revenues. These observations relate more particularly to urban service, for the conditions surrounding suburban and interurban lines may approximate more closely to steam railroad than to electric railway problems.

#### HINTS FOR THE WISE

Let me summarize:

(a) A rate of fare which seriously interferes with the riding constituency of any company will lead in the long run to financial ruin of that company.

(b) We cannot return too quickly to the former policy of building up increased revenues by resorting to the merchandising side of the business, whereby empty seats will be filled.

(c) Re-zoning in particular cases should be considered.

(d) Commutation tickets should be adopted where the results through the attraction of traffic at timely hours and to convenient localities would justify their use.

(e) Operating conditions should be studied and lighter cars or perhaps one-man cars be installed where conditions warrant.

Differences of opinion, honestly expressed, are not so antagonistic as formerly they were thought to be. They are but the triangulation of ideas. They represent merely the divergence of the view points upon which different observers stand. We have discovered that the man traveling due east and the one traveling due west ultimately meet. The meeting point in this place, I am sure, is that the wellbeing of the electric railways as efficient public servants, supported by adequate revenues without which they cannot continue that service, must be assured to them, and thus their service to the public.

### Ambitious Japanese Electrification Project

Application has been made to the Japanese government for permission to construct a high-speed electric railway between Tokyo and Osaka, a distance of 287 miles. It is estimated that an expenditure of about \$100,000,000 will be necessary for the purpose. The proposed line is about 69 miles shorter than the existing steam railroad. Doubt is expressed in Japan as to the willingness of the government to permit the construction of an electric line competing with its own steam line, but the promoters are counting on the changed commercial, financial and transportation conditions brought about by the war to cause the government to consider the project favorably.



## Side Lights on the Zone Fare—Car Capacity

**British Cars Have More Seats Than American Cars and Their Conductors Make a Much Larger Number of Collections per Car-Mile**

By WALTER JACKSON

THE statement that the practicability of zone fare collection in British cities is due to the use of small cars has been made so often that a great many people believe it. No later than this year it was gravely repeated in an admirable analysis of a fare situation. As nobody could have any ulterior motive in circulating a tale like this, it is probable that the misconception arose from the half knowledge that most British cars are of the single-truck type. The fact is that nearly all of these cars have two decks. It is only on the Continent that single-deck cars smaller than ours prevail.

So far from having a smaller seating capacity than American cars, the British cars are generally larger. This is what we ought to expect when we read that systems like Liverpool and Glasgow average sixteen to twenty passengers per car-mile. Even with their better all-day riding, one would hardly imagine that British tramways enjoyed anything like a 50 per cent load factor, which would have to be the case if their capacity ran only from thirty-two to forty seats. British cars actually have from fifty-six to seventy-eight seats each. The following comparison with large American city cars built during recent years tells the tale.

### SEATING CAPACITY OF BRITISH AND AMERICAN CARS

United Kingdom		United States	
London County Council.....	78	Brooklyn Rapid Transit.....	58
West Ham .....	78	New York City Railways.....	51
Aberdeen .....	54	Third Avenue Railway.....	51
Glasgow .....	62	Youngstown.....	56
Belfast .....	60	Chicago .....	40
Dublin .....	58	Milwaukee.....	52
Leds .....	60	Philadelphia .....	54
Reading .....	72	Allentown .....	57

As a further example it may be mentioned that the standard car suggested for the Edinburgh Tramways electrification would be a single-truck vehicle seating sixty people.

Nevertheless, it is probable that during the rush hours the American cars average a greater total seating and standing load than the British cars do. This does not mean that the British car has no room for standees, inasmuch as the lower deck is generally fitted with longitudinal seats. The paradox arises from the fact that as so much of the British riding is short haul, it is necessary to limit the number of standees. Short riders will not patronize heavily loaded cars. For example, although the seating capacity of the standard Glasgow car is sixty-two, the number of standees permitted in normal times is only six. In spite of this limitation Glasgow probably has the highest number of passengers per car mile in the world.

If the all-day load, rather than the peak load, is taken as the governing factor, British tramways are far more justified in their choice of large-capacity cars than are those of the United States and Canada. Actually, the double-deck car gives the required rush-hour reserve capacity at less cost in propelling surplus weight than do the "jumbos" in so many of our cities. However, it is not the reserve capacity feature of the double-deck car that is the topic in hand but rather the physical possibility of collecting graduated fares on such a car.

Several British operators hold the opinion that prepayment is "a consummation devoutly to be wished." It is readily apparent that the British double-deck car is handicapped for prepayment because so large a part of the platform is occupied by the stairway to the upper deck. The best that can be done is to request passengers who are proceeding to the upper deck to pay as they enter. This request has received additional emphasis since the coming of female conductors. Most of the fares, necessarily, are collected after the passenger takes his seat.

Practically all of these cars are of one general type, namely, the bodies have end doors but there are no vestibule doors. In recent years the upper deck has been inclosed in whole or in part, and sash has been added over the dashers. Since the platforms are open, the step accident is still a prominent feature in operation.

The first question asked about the zone fare is: Does the conductor get all of the fares? Of course, he is bound to miss some fares, but such oversights are minimized by the rule that each passenger must be prepared to show to either the conductor or the ticket inspector a receipt for fare paid on the current trip. The possibilities of the zone fare can best be appreciated from the amount of revenue collected for the treasury from a given number of passengers per car-mile. For example, in the year 1918 the conductors of Liverpool turned over an average of 18.91d. (38 cents) for every car-mile operated. This corresponded to an average of sixteen passengers per car-mile, 80 per cent of whom paid the minimum fare of 1d. During the 1918-1919 Christmas and New Year holidays the conductors on some lines of the West Ham Corporation Tramways turned in as high as 24.86d. (more than 49 cents) per car-mile from a traffic of twenty passengers per car-mile. On the Paisley Road and Alexandra Park line in Glasgow, conductors average almost twenty-three fare collections per car-mile!

If it is possible for a British conductor to carry on so many fare transactions per car-mile, American operators with their more convenient single-deck, big platform cars should have little to fear. A short-distance fare is far more likely to increase the off-peak hour traffic than the rush-hour traffic. If the peak-hour cars are already filled with regular long-distance riders, they will not attract anybody who has the choice of walking. During the much larger number of off hours the case is different. It is then that many short riders can be added without putting an extra burden upon the conductor; and this can be done also without adding any cars, if a short headway service is already in vogue. It follows that in comparing the great difference in passengers per car-mile here and abroad, allowance must be made for two things—first, that the average ride in Great Britain is shorter; second, that the loading on British tramways during off-peak hours is more favorable than here.

To conclude; there is certainly no truth in the assumption that the zone fare has proved workable in the United Kingdom because British cars are smaller than our own. On the contrary, their seating capacity is nearly always greater and their conductors must carry on a greater number of fare collections per car-mile than under the universal fare system. Hence, if British street railways have made the zone fare workable, American roads ought to be able to do still better in adapting either prepayment or postpayment to the roomier platforms and aisles of our cars. The will will find the way.

## Regulation with Teeth

### British Columbia Has New Law Providing Unusual Means for Enforcing Orders

THE public utility act recently passed by the Legislative Assembly of the Province of British Columbia possesses several novel features. Not only is the regulatory work centralized in one commissioner, appointed by the lieutenant-governor in council for a period of ten years, but the commission has unusual power of regulation and enforcement.

#### FULL CONTROL OVER RATES

No mention will be made of the customary powers of the commission over the issuance of securities, amalgamation, sales, supervision over track connections and service in general. With regard to rate making, however, it may be pointed out that except by the direction of the commission or with its approval first obtained, no utility may establish any new rates, and every change in rate shall come into force only on a date fixed by the commission. The power of the commission over rates applies whether they are fixed by or subject to an agreement or otherwise and whether the agreement has been incorporated in or made binding by any general or special legislative act or otherwise.

In fixing rates the commission is required to have due regard, among other things, to giving the utility a fair and reasonable return upon "the appraised value of the property" and to the protection of the public from rates that are excessive as being more than a fair and reasonable charge for service of the nature and quality furnished by the company. The commission must consider all matters proper to be considered as affecting the rate, including the circumstances existing at the time any former rate was made or fixed as well as the circumstances existing at the time of the inquiry. In any case where the commission deems it expedient, it may make the alteration or continuance of any rate conditional upon the performance of some particular act.

Pending the determination of a fare for the British Columbia Electric Railway in Vancouver, the act requires the company from April 9, 1919, to keep in trust the amount of fare charged above 5 cents but not exceeding 6 cents. If the rate fixed by the commission is less than the rate charged during the period, the excess must be paid by the company to the Vancouver General Hospital, any remaining amount going to the company. If the rate fixed by the commission exceeds the rate charged during the period, then the whole of the amount collected shall go to the company.

In regard to appraisals the act states that the commission may "inquire into every fact which in its judgment has any bearing upon value, including the condition and value of the undertaking as a going concern and the amount of money actually and reasonably expended in that undertaking in order to furnish service reasonably adequate to the requirements of the community served as that community exists at the time of the appraisal."

#### POWER OVER SERVICE AND DEPRECIATION

The commission has general power over service, and it may make regulations prescribing the conditions for all agreements entered into by companies in respect to service. The commission is given power to order "rea-

sonable and expedient" extensions within municipalities and to apportion the cost as it deems equitable, and to order extensions generally in cases where it believes that sufficient business exists to justify construction and maintenance of the extension and that the financial condition of the company reasonably warrants the expenditure.

Whenever the commission after inquiry considers that it is necessary and reasonable that a depreciation account should be carried for the protection of security holders and creditors, it may order a company to keep an adequate depreciation account. The commission shall from time to time after inquiry fix proper and adequate rates for depreciation sufficient to provide the amounts required in addition to the expenditures made for maintenance.

The utility shall conform its depreciation account to rates fixed by the commission and shall set aside all money of this character in a depreciation fund, the income from which shall be added to the fund. The depreciation fund shall not be expended except for depreciation, improvements, new construction, extensions or additions.

Where the commission is of the opinion that the appointment of a supervisor or inspector is necessary and expedient for the purpose of supervising or inspecting, continuously or otherwise, the property or service of any company with a view to prescribing and carrying out measures for the safety of the public and the patrons or for the adequacy of service, the commission may appoint a supervisor or inspector over the company and prescribe his duties. The amount of his salary and expenses may be placed upon the municipality served or apportioned in such manner as the commission deems proper.

#### ORDERS CAN BE ENFORCED

Three direct means of enforcing its orders are given to the commission. In the first place, the commission may forcibly or otherwise seize and take possession of the whole or any part of the property of any company and manage the business in the interest of the security holders, the creditors and the public, exercising all functions of the directors and officers until its orders have been enforced. In the second place, any order made by the commission may be made an order of the Supreme Court through certification and filing and shall be enforceable in like manner as any order or judgment of that court. In the third place, when it is believed that no effectual means exists for compelling a company to comply with its orders, the commission may transmit to the attorney general a certificate setting forth the default of the company. Upon publication in the official bulletin of a public notice regarding the receipt of this certificate by the attorney general, the default of the company so established is ground for an action to dissolve the company.

The finding of the commission upon any question of fact within its jurisdiction, of course, is binding upon all parties and in all courts, but an appeal to a judge of the Court of Appeal may be taken upon any question as to law or jurisdiction. A stay of any order may be granted during the pendency of the appeal. The act contains three pages of detailed penalties running from \$20 to \$1000 for a single day's refusal to obey orders, making of false returns, willful default in giving information and general violations.

## Comparative Census Data for Electric Railways

THE table below divides geographically the 1912 and 1917 census figures published in the ELECTRIC RAILWAY JOURNAL of April 26, 1919. Inasmuch as the table is in preliminary form, having been prepared from the tentative 1917 returns for individual states and from the unadjusted totals of the 1912 census report, so extended analysis seems advisable now.

The percentage changes in the data, however, seem to indicate that the largest growth in single track, cars and power output was in the West North Central and West South Central sections. Wages generally increased more rapidly than employees, to the least de-

gree in the Mountain section. The passenger gains were heavier in the East than in the West; the car miles, *vice versa*.

In all sections the operating expenses increased faster than the gross income, and in the West and the South this was true of income deductions. The best showing financially was made by the South Atlantic States, and the worst by the New England, Mountain and Pacific groups. The effect of jitney competition in these latter sections is thus visible. The state groupings follow:

*New England:* Me., New Hamp., Vt., Mass., R. I., Conn.; *Middle Atlantic:* N. Y., N. J., Penn.; *East North Central:* Ohio, Ind., Ill., Mich., Wis.; *West North Central:* Minn., Ia., Mo., N. D., S. D., Neb., Kan.; *South Atlantic:* Del., Md., D. C., Va., W. Va., N. C., S. C., Ga., Fla.; *East South Central:* Ky., Tenn., Ala., Miss.; *West South Central:* Ark., La., Okla., Tex.; *Mountain:* Mont., Col., New Mex., Ariz., Idaho, Wyo., Nev., Utah; *Pacific:* Wash., Ore., Cal.

GEOGRAPHICAL DISTRIBUTION OF 1917 AND 1912 CENSUS STATISTICS FOR ELECTRIC RAILWAYS IN UNITED STATES  
(1917 Figures in Roman; 1912 Figures in Italics)

	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	United States
Number of companies.....	114	515	255	90	109	50	70	40	66	1,309
Operating.....	119	496	253	90	123	46	63	42	68	1,309
Lessor.....	26	81	85	85	85	49	39	60	90	947
Lessor.....	28	274	30	5	15	1	2	1	6	362
Miles of line.....	4,345.91	7,203.73	9,650.17	2,527.11	2,397.39	1,073.47	1,338.23	963.26	3,058.34	352,557.61
Miles of single track.....	4,291.26	6,890.09	9,170.53	2,139.73	2,199.21	948.26	1,105.62	793.92	2,894.01	307,377.86
Cars.....	558.19	1,548.41	1,270.86	3,665.43	3,277.86	1,450.61	682.37	1,301.30	4,689.64	44,824.25
Passenger.....	5,294.55	10,043.05	11,809.69	3,068.62	2,922.29	1,287.26	1,797.32	1,185.84	4,063.82	41,064.82
All other.....	14,232	31,196	24,069	9,484	7,387	2,725	2,895	1,673	8,942	102,603
Electric locomotives.....	15,835	30,607	24,696	6,405	6,232	2,672	2,593	1,536	7,956	94,016
Number of persons employed.....	21	38	62	51	22	8	6	22	130	358
Salaries and wages.....	32,606	97,452	69,742	24,048	22,872	8,576	9,771	4,868	24,991	294,226
Total horsepower.....	331,948	887,460.814	865,322.814	\$210,288.682	\$17,360.814	\$6,509.520	\$7,805.532	\$4,498.285	\$24,275.640	\$267,740.562
Steam engines.....	253	361	467	155	206	90	108	27	77	1,174
Internal combustion engines.....	1	14	4	12	11	.....	7	1	.....	*50
Water wheels.....	56	36	41	21	80	.....	8	74	.....	316
Kilowatt capacity of dynamos.....	354,845	706,917	653,920	297,619	393,983	109,505	109,996	40,435	268,240	*2,935,460
Output of stations, kilowatt-hours.....	806,862,258	1,672,355,678	1,775,205,270	677,668,614	842,368,045	203,465,858	305,529,100	99,754,432	857,283,267	7,240,502,789
Current purchased, kilowatt-hours.....	193,076,125	1,632,794,419	1,430,410,881	275,527,329	423,906,706	206,769,700	70,449,880	82,155,833	631,958,359	4,947,338,042
Passengers carried.....	1,694,779,084	5,027,469,984	3,741,785,407	1,244,121,243	943,592,756	416,923,306	385,275,805	191,917,415	916,920,573	13,061,574,573
Revenue.....	1,242,076,786	4,225,287,064	2,712,624,699	902,368,927	747,561,816	292,004,609	313,203,554	162,222,128	705,310,819	11,302,660,482
Free.....	18,462,597	40,231,675	65,393,774	7,452,623	11,339,615	6,404,710	6,552,287	2,960,655	22,318,180	5,515,546,667
Revenue car mileage.....	209,504,233	703,861,102	542,934,741	173,865,881	142,657,669	64,293,665	76,935,852	30,110,452	189,059,413	2,139,222,930
Railway operations—revenues.....	\$68,804,330	\$230,354,775	\$162,091,962	\$52,734,834	\$42,426,736	\$15,882,474	\$20,276,274	\$10,617,288	\$48,091,991	*\$651,281,114
Auxiliary operations—revenues.....	1,560,085	3,844,737	16,779,872	1,510,624	1,409,938	4,764,395	2,771,278	1,197,839	8,408,300	\$5,543,978
Non-operating income.....	571,122,331	\$242,836,296	\$182,907,451	\$55,285,267	\$99,905,984	\$20,893,752	\$24,130,903	\$12,280,363	\$57,775,893	\$730,108,040
Income from all sources.....	\$71,423,017	\$18,038,906	\$98,260,471	\$45,179,223	\$1,368,997	\$1,589,252	\$8,853,761	\$1,950,736	\$6,493,175	\$65,930,517
Operating expenses.....	\$53,009,197	\$140,318,521	\$117,534,439	\$38,511,939	\$21,148,429	\$12,537,999	\$13,927,537	\$7,489,797	\$39,141,924	*\$452,813,684
Deductions from income (including taxes).....	14,008,296	79,462,232	48,660,431	14,217,822	18,440,255	6,438,489	6,636,163	4,371,483	21,768,517	*\$203,833,149
Net income.....	\$1,881,475	\$18,455,543	\$18,512,581	\$5,525,306	\$9,317,300	\$1,917,264	\$3,567,203	\$419,083	\$13,334,348	*\$56,461,207

\* These totals, compiled from the preliminary individual state reports issued by the government, do not quite check with the totals presented in the government's own summary as shown in Table 1 in the *Electric Railway Journal* of April 26, owing partly to slight changes since the preliminary returns were issued. † These totals as now given for 1912 represent slight readjustments of the divisional figures, taken from the 1912 census report. ‡ Deficit.

## Cleaning Twelve Cars a Day with Three Men

The East St. Louis & Suburban Railway Accomplishes This Work by Means of Special Washing Equipment

CAR washing by the East St. Louis & Suburban Railway is a thorough-going operation. The work is done in a washing room containing two tracks of two-car capacity each. The equipment used to wash the outside of the cars includes a length of 1½-in. iron pipe extending along the full length of these tracks and at the height of the car roof. This pipe is perforated about every 4 in. with a ⅜-in. hole. Each pipe is connected at one end to a main water line by a flexible joint, and a handle lever is provided so that the car washer can rotate the pipe to throw the stream against the side of the car at any desired height from the ground. The stream is, of course, started at the highest point on the car side, the washer scrubbing the side of the car with a long-handled brush and gradually working down the side to the bottom with both stream and brush. Each pipe is sectionalized by means of a valve in the middle so that either one car can be washed alone or two cars on each track can be washed simultaneously.

In addition to the outside cleaning the cars are washed inside from roof to floor, including seats, by means of a double hose line. Air is brought into the water line at 100 lb. pressure, both air and water being controlled at the nozzle. On the ceilings, seats, etc., much air and little water are used, giving a fine spray, sufficient for washing purposes without too thoroughly soaking the parts. On the floor and lower walls considerable quantities of water are used and the cars are flushed out as one would flush off a sidewalk.

The cars are washed according to mileage and just previous to inspection which for the city cars averages about every 1500 miles. They are run directly from the washing shed to the inspection pits.

The floor of the washing shed is of concrete and slopes toward the outer side of each rail. In order to prevent flooding of the rails, however, an abutment several inches high extends along the outside of each rail the full length of the track, and the water is conveyed to underdrains.

This washing plant has been in service about one year. Previous to its installation three men could thoroughly clean not more than four cars a day. Under the present arrangement an average of about twelve cars a day are thoroughly washed. With only three men working as at present not more than two cars are ever being cleaned simultaneously and as in general all three men work together on the same car.

## Trolley Station Signs Used in Brooklyn

IN WALTER JACKSON'S article in the March 8 issue of the ELECTRIC RAILWAY JOURNAL on the electric railways of Glasgow there was included a drawing of a trolley station sign used in that city. The drawing was complete enough so that anyone desiring to make up a similar sign could do so.

The accompanying illustration shows a sign used in Brooklyn for the same purpose which would seem to be

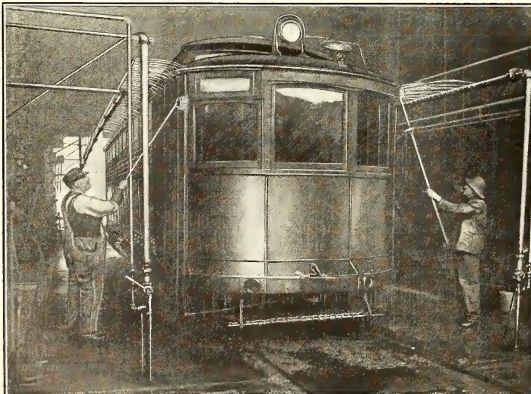
just as pleasing to the eye and should be considerably cheaper to make if both signs are made in this country and under the same conditions. Only a single double-faced sign is required if the plan shown here is used, the sign being enameled

and the letters white on a blue background. The dimensions of the Brooklyn sign are 18 in. x 36 in. and the sign is of No. 16 B. W. G. iron.

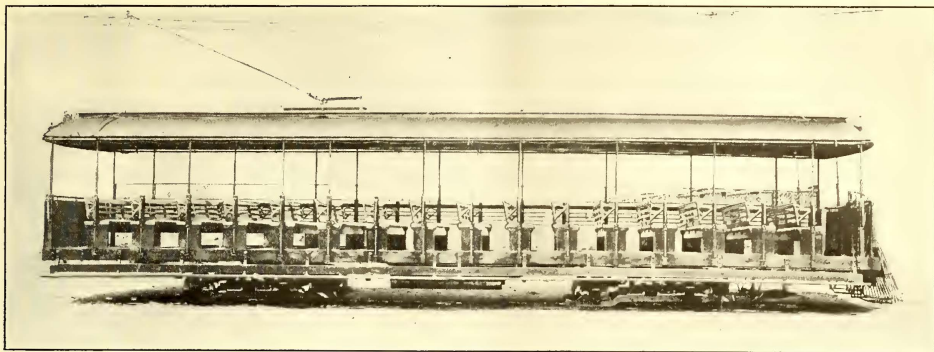
Enameled signs of good quality are more expensive in first cost than are painted ones but they cost much less to maintain. Unless the enamel is chipped off by a blow, which is not likely to happen to such a sign, it is practically permanent and if the surface becomes dusty and dim it can always be freshened up by merely wiping off the dirt. And such attention is needed only at intervals of several years.



BROOKLYN TYPE OF TROLLEY STATION SIGN



AT LEFT, WASHING CARS ON THE OUTSIDE WITH SPECIAL SPRINKLING SYSTEM AT EAST ST. LOUIS. AT RIGHT, METHOD OF CLEANING CAR INTERIORS



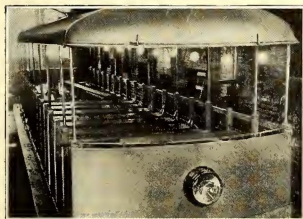
ONE OF THE OLD "MOONLIGHT" CARS

## Light Open Cars for Amusement Park Traffic

United Railways of St. Louis Builds Type with Special Arrangement for Train Operation

THE term "moonlight car" in St. Louis has been handed down from the time when the company used to operate on pleasure trips and for special park traffic a type of car constructed with a canvas roof which could be rolled back. The fact is the canvas was seldom rolled back and later twenty cars—ten leaders and ten trailers—of similar construction were built with a permanent roof. Some time ago ten of these cars, nine trailers and one leader, were destroyed by fire and the company is now building ten new cars and making a few improvements over the older equipment.

The underframe construction consists of 8-in., 6½-lb. channel side sills, 3½-in. x 5½-in. wooden cross sills except over the trucks where 3½-in. x 1½-in. wooden sills are used with 2½ in. x 1½-in. x ¼-in. T-iron longitudinal members. The overall length is 47 ft. 3 in. and the over-all width 7 ft. 10½ in. In the new body design an 11-in. x



THE FIRST NEW CAR NEARLY COMPLETED

¾-in. reinforcing plate has been added to each side beam by fastening a 4-in. x 3-in. x ¾-in. angle to the base of the 8-in., 11½-lb. channel. These plates extend practically the entire length of the car. Since the original cars were built Tomlinson couplers have been adopted as standard and this has necessitated some change from the original design. In addition to these changes the wheelbase has been increased from 22 ft. to 24 ft. 2 in. The weight of the car is 34,000 lb.

Views of one of the old cars and the first of the new ones nearing completion are shown. The seats are also of wood construction throughout and the side posts are also of wood. Owing to the curvature of the front dasher it is necessary to shorten the first seat on the car for con-

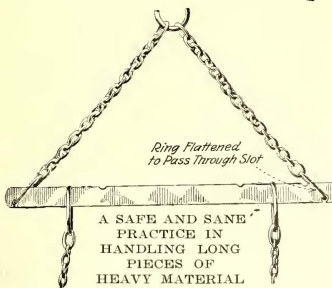
venience of the passengers occupying this seat. The steps fold up and it will be noted that the cars are single end operated so that the left side is permanently closed and without steps. The arches supporting the roof are 1-in. iron pipe extending continuous from side to side. The roof is of wood covered with canvas with a foot-board and trolley base support as shown. The two brackets at the lower edge of the end of the roof shown in the illustration are flag brackets.

These cars are equipped with United Railways No. 27 maximum traction trucks and two Westinghouse No. 56 motors. Ten of the cars have control equipment for operation either singly or as leaders in two-car trains, while the other ten can be used only as trailers in two-car operation. The leaders are equipped with K-35-W-2 control while the trailers have K-11-A control.

All cars are equipped with General Electric Company straight air brakes with an emergency feature and Golden Glow No. TR-128 headlights. The motor cars will seat ninety-six and the trail cars 100 passengers.

## Spreader for Use with Cranes

IN A RECENT executive series poster the National Safety Council advocates the use of a spreader of some such form as that shown in the accompanying sketch for use when lifting bars or other long material



by means of a crane. Such work is dangerous with makeshift spreaders because the load is apt to fall if the spreader slips. This spreader is a one-piece steel bar designed so as not to require the use of bolts. It cannot become disengaged and the sling chains hang vertically from the notches in the spreader.

## LETTER TO THE EDITORS

### Anent the Stress on a Stranded Conductor Core

THE CONNECTICUT COMPANY  
NEW HAVEN, CONN., Apr. 29, 1919.

To the Editors:

I am very much interested in the article by Paul A. B. Sahn on page 786 of the JOURNAL for Apr. 19, in which he raises the question as to whether the core of stranded wire is proportionately stressed and cites experiments to show that it is not.

Obviously, under the conditions of Mr. Sahn's example, namely, a core surrounded by tightly bound wires which do not change their relative position, the stresses in all wires will be substantially identical, but the question in my mind is, do these conditions obtain in the case of a long span? I am frank to say that I have never made any experiments to determine the facts. A test on a short section would probably show little variation, but there is a very general belief, emphasized by the use in a considerable number of large spans of a hemp-core cable, and in the American Telephone & Telegraph classification of strands the employment of the breaking strength of six wires for the rating, that in service conditions there is not that rigidity of relation assumed in Mr. Sahn's example. I am sure that all interested in line construction would be glad to learn from Mr. Sahn, or anyone else, of any actual tests which would establish the facts, whatever they may be.

CHARLES RUFUS HARTE,  
Construction Engineer.

## AMERICAN ASSOCIATION NEWS

### Bureau of Information and Statistics

SECRETARY E. B. BURRITT has issued to member companies a statement of the activities of the Bureau of Information and Statistics which is now administered by J. W. Welsh, special engineer. After an introductory explanation he says:

Among the more recent reports and compilations prepared by the bureau, since the March 1 report on this subject, are the following:

*Table of Valuations of a Number of Electric Railway Properties*, based on appraised and negotiated valuations, and showing in general amount and kind of property included.

*Rates of Insurance* covering workmen's compensation for all states conducting such business. Information has just been received showing in general the rates of insurance for the various classes of occupational risks involved in electric railway operation and construction.

*Effect of Time in Fare Increase Cases on Percentage Increase in Revenue Obtained*. Information has been secured from a number of medium-size properties showing the comparative change in passengers carried and railway operating revenue received for a consecutive period of six months after changes in fare occurred showing the tendency to secure the theoretical rate as time advances.

*Compensation for Carrying United States Mail*. At the request of the association, F. W. Doolittle has prepared a form of exhibit for the guidance of companies in presenting their testimonies at the regional hearings which will be conducted at various points in the country by the Interstate Commerce Commission commencing in Washington on June 9.

*Cost of Injuries and Damages, Claim Department Expenses, Workmen's Compensation and Medical Bureaus*. Information from a number of typical companies has been secured showing the actual amounts of these items and their relation to the gross revenues.

*Maintenance and Depreciation*. An analysis has been made based on reports of public utility commissions, special investigations of properties by consulting engineers and court decisions showing the charges made against operating expense covering maintenance on the one hand, and the amounts chargeable to a reserve fund covering depreciation on the other hand. In some recent cases these charges are fixed in the franchise agreements. In all cases, the authority and date of the determination are indicated.

*Methods of Interurban Companies for Increasing Fares Whether by Shortening the Five-Cent Zones or Increasing Rates Per Mile or Otherwise*. This consists of a list of companies showing the present increased rates of fare for each of the above classes.

*Increased Fare Situation*. The new rates of fare in all cities are shown in a very comprehensive compilation, in which the cities have been grouped together on the basis of the rates of fare and giving also the name of the operating company, the former rate of fare and effective date of fare increase.

*Effect of Increased Rates of Fare on Operating Revenues*. A tabulation of typical cities of over 100,000 population, having increased rates of fare and showing the effect of this increase on operating revenues compared with the theoretical expected increase. This is based upon replies received to letters sent out by the association during the last few months.

*Income Accounts and Operating Expenses*. A comparative statement of the principal income accounts and operating expenses for a group of approximately 300 companies representing 84 per cent of the operating revenues of the country has been prepared.

*Taxes and Other Requirements*. A compilation of approximately 150 companies showing a classified list of tax burdens and other requirements such as paving costs, bridge charges, public park and police expenses, etc., has been prepared. This is on a comparative basis for the years 1912 to 1916, inclusive.

*Bulletin on Wages and Working Conditions of Trainmen*. The second edition of this bulletin covering about 300 companies summarizing the situation up to April 15, and including those companies formerly reported in edition No. 1 has just been issued. This is a very complete and comprehensive comparison by means of elaborate tables, showing wages, various working conditions and labor situations in various parts of the country classified on the basis of the miles of track of the operating companies.

*One-Man Car Operation*. A questionnaire on the above subject has been sent out by the committee on one-man car operation of the Transportation & Traffic Association, and a very general response to this inquiry has been received. The association also has a corrected list of cities using one-man cars and it is in a position to furnish, in individual cases, the most recent statistics available regarding the operating economies of one-man cars on the basis of the above replies.

*Skip-Stop Bulletin*. This is a printed compilation showing the skip-stop situation in a number of typical cities together with a statement of operating economies which have been secured by this means.

### Preliminary Work on Code of Traffic Principles

AS THE result of the meeting of the committee on a code of traffic principles of the Traffic and Transportation Association, held in New York City on April 25, a program of work in connection with this subject was drawn up and the basis laid for outlining the essentials to be covered. The members present were H. B. Flowers, Baltimore, Md., chairman; A. Gaboury, Montreal, Can.; P. E. Wilson, Cleveland, Ohio, and J. H. Stephens, Washington, D. C. L. H. Palmer, E. B. Burritt and J. W. Welsh also attended the meeting. The date for the next meeting was tentatively set for May 21.

## Recent Happenings in Great Britain

### Considerable New Work in Prospect—Railways Gradually Returning to Pre-War Basis

(From Our Regular Correspondent)

One of the absurdities of the present situation in regard to motor omnibuses, and one which it may be hoped the proposed Ministry of Ways and Communications will end, was emphasized during March by the action of the London County Council. In the last two or three years before the war several town councils in England obtained permission to run motor omnibuses into areas outside the municipal boundary. When Parliament gave the authority it accompanied with it the condition that the municipality should pay to the outside local authority three-eighths of a penny per omnibus-mile run on the "outside" roads, this money being for road maintenance. Companies which run omnibuses, however, do not require any statutory powers to enable them to do so, and the opportunity to put a corresponding charge on them has not arisen except on one occasion. The exception was that when the Middlesex County Council obtained Parliamentary powers to construct a great new highway it succeeded in obtaining a clause authorizing such a charge to be made on any company running omnibuses on the new road. Owing to the war the latter, by the way, has not yet been built.

#### OMNIBUS AUXILIARY TO TRAMWAY

The London County Council is now proposing to apply for powers to work omnibuses as an auxiliary to its tramways. The Council, however, unlike the municipalities throughout the country, are not the road authority in London. The councils of boroughs into which London is divided have the charge of maintaining the streets and roads. The highways committee of the County Council proposed that three-eighths of a penny per mile run shall be paid, partly, it would appear, to the borough councils and partly into the tramway funds. This proposal was opposed at a meeting of the Council, and it was withdrawn. When the bill comes before a Parliamentary committee the provision may, of course, be reinserted. Should that come about, agitation will arise for the London General Omnibus Company to pay a contribution for road maintenance.

A most interesting report has been presented to the London County Council on the shortage of cars and the difficulty of maintenance owing to the war. The present time-table requires 1244 electric cars (amounting with 20 per cent spares, to 1493 cars) and 114 trailers (amounting with 5 per cent spares, to 120 cars). On Feb. 20 only 1049 electric cars and 114 trailers were in service; there being, therefore, 195 electric cars short of immediate needs. The total numbers of cars held by the Council are 1662 electric cars and 158 trailers, so that the electric cars out

of service for repairs exceed 600—approximately 40 per cent of the total number. The shortage from present time-table requirements has developed recently as a result principally of an unexpectedly large number of breakages of axles. During 1914—when the average number of cars in service was larger than now—only 127 axles broke. During the short period from Jan. 1 to Feb. 12, 1919, the number of axle breakages was 288. The rate was particularly high during the frosty weather, and the high average during this period is attributed partly to the overloading of cars under present conditions at times of heaviest traffic, and partly to the poor physical condition of the rolling stock, as a result of the heavy use to which it has been subjected over nearly five years—in which period abnormal conditions caused by the war have made it impossible to maintain the former high standard in connection with car repairs and renewals. If the promises made by the contractors are fulfilled, this condition will soon be relieved. During the war many cars have had to be depleted of available parts unobtainable from outside sources to replace broken or worn-out parts on service cars. All manufactures for civil purposes were practically discontinued during the war, except for munition purposes, but the making of malleable iron and steel castings and forgings is being resumed. As all undertakings are pressing for materials of this kind, deliver is slow.

It now seems probable that Edinburgh, the only tramway undertaking of any size in Britain which has not been electrified, will soon adopt the trolley system. More than twenty years ago, when other towns were electrifying their tramways, Edinburgh adopted the cable system, principally because it was felt that cable haulage was specially suitable for the heavy gradients in the city and because the city authorities were opposed to the overhead wires, and the conduit system had not been developed. Financially the undertaking has been successful, but the trouble with the cable system at junctions and the difficulty of extending it through the outer suburbs are drawbacks which have been keenly felt. The undertaking is owned by the city, but it has been worked on lease by a private company. The lease is now expiring, and soon the Town Council will take over the operation.

In view of these things, the municipality obtained reports by experts some time ago as to the future working and the recommendations were in favor of converting the system to electric traction. Another report is now issued, this time by R. S. Pilcher, recently appointed Edinburgh mu-

nicipal tramway manager. Mr. Pilcher strongly favored the trolley system, and a committee of the Town Council has adopted his views. The question of the use of the conduit on Princes Street, often referred to as one of the finest thoroughfares in Europe, is still open for settlement. Mr. Pilcher favors the use of the overhead wires throughout.

#### FAVORABLE UNDERGROUND REPORT

Lloyd George Hamilton, chairman of the Underground Electric Railways, London, presented a very favorable report at the annual meeting of the shareholders in March. The 6 per cent income bondholders receive 5 per cent. The Underground Company derives its revenue from the four underground railway companies, the omnibus company and other concerns, a large proportion of whose shares it holds. The improved position of the operating company is thus reflected in the accounts of the Underground Company. Apart from any question of nationalization or of strikes the operating companies, however, have difficult times to face owing to the accumulation of arrears of work during the war. The London General Omnibus Company needs to renew most of its vehicles, but it has large reserve funds which will help materially. The chairman warned the shareholders against haste in cutting reserves or raising fares.

#### PROGRESS ON MINISTRY OF WAYS MEASURE

A good deal of the main opposition to the Ministry of Ways and Communications bill was eliminated during the debate on the second reading of the bill in the House of Commons on March 17 and 18. The proposal in the measure that the new Ministry should have power by means of orders in Council to buy up railways and other means of transportation was dropped. The result will be that when such steps are proposed the Government will have to carry bills through Parliament to authorize them. Another point made by Sir Eric Geddes (the Minister-designate) was that municipally-owned tramways are not to come within the scope of the bill. Sir Eric pointed out that municipal tramways on the whole are prosperous, their average earnings on capital being 7 per cent. He said nothing about company-owned tramways, but, according to the bill, they, like railways, are to be controlled by the Ministry. There is no doubt that during the committee stage of the bill there will be much opposition on details, and many changes will be proposed. But so far as the main principles are concerned it is significant that the second reading was agreed to without a division.

In the end of March a forty-eight hour working week, arranged after long negotiations, came into force on all British tramways. At the same date further increases of fares on the London underground railways and the London omnibuses were announced.

# News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION  
PERSONAL MENTION

## Down to Business

### Buffalo Appraisal Commission Told Local Railway Should Be Allowed a Return on \$44,654,436

Evidence is being taken by the board of arbitration selected by the International Railway, Buffalo, N. Y., and the city of Buffalo to determine the valuation of the property of the company within the city to be used as a basis of an agreement between the company and the city whereby the International lines will be placed under municipal control.

It will probably take three weeks to hear the evidence. The board will then determine upon a figure upon which the company shall be allowed an 8 per cent return. As the result of a law passed by the State Legislature and approved by Mayor George S. Buck, the city and company will then enter into negotiations for a service-at-cost agreement in which a rate of fare will be specified. This agreement must be submitted to the voters for their approval.

### ENGINEER WITNESS EXPLAINS

Among the witnesses already called by the railway is Jay H. Perkins of the United Gas & Electric Engineering Corporation, New York, consulting, contracting and operating engineer for the electric railways at Buffalo. Mr. Perkins placed the total figure upon which the International Railway should be allowed a return as \$44,654,436. An analysis of these figures follows:

Bare physical as of June 30, 1915.....	\$18,013,808
Real estate, June 30, 1915.....	587,659
Contractors' profit, June 30, 1915.....	1,211,035
Stipulated as of June 30, 1915.....	\$20,112,502
Capital additions as of June 30, 1915, to Dec. 31, 1918.....	2,562,550
Stipulated as of Dec. 31, 1918.....	\$22,675,052
Omissions and contingencies.....	972,965
Bare construction cost.....	\$23,648,017
Engineering and superintending during construction.....	647,854
Law expenditures during construction.....	98,283
Injuries and damages during construction.....	177,945
Miscellaneous construction during construction.....	187,519
Taxes during construction.....	119,636
Interest during construction.....	670,525
Working capital not included in first item.....	284,026
Total fixed physical capital (including promotion and reorganization).....	2,075,845
Superseded property.....	2,764,125
Total.....	\$30,673,775
Cost of financing.....	612,475
Going value.....	8,612,750
Capital entitled to return.....	\$39,900,000
Bond discount.....	4,754,435
Grand Total.....	\$44,654,435

Under the caption of "A Suggestion to the Public," the *Service Spot Light*, the official organ of the railway, says:

"The company, by reason of financial burdens and lack of immediate funds, is in

no position to back unreasonable claims. It follows then that the appraisal proceedings must partake of the nature of 'triangular collusion' if we may call it that. It must be the genuine effort of three men to meet an emergency equitably, justly, with intelligence and with fairness to all concerned. The city is in no mood to all trifle or submit to methods that are outside the spirit of the present service-at-cost plan.

In explaining various items in the figures he submitted to the board, Mr. Perkins said that the going value of the company should be put at \$12,000,000. Accumulated deficiencies, he placed at \$8,000,000. Expenses of organization of the company, he said, totaled \$900,000, and covered expenses of the Crosstown line, the Buffalo Street Railroad, the Buffalo West Side, the East Side lines and others which were absorbed in the organization of the International Railway. Expenses of consolidation were totaled at \$500,000.

Newspaper readers of Buffalo are advised by the railway through the *Service Spot Light* as follows:

From headlines and other articles—with the exception of editorials—do not draw wrong conclusions. We make an exception of editorials for this reason. Editorials are the medium through which newspapers speak their policy. Every newspaper is entitled to its own opinion in any public matter. Therefore, we exempt editorials. But from headlines and newspaper articles wrong inferences may be drawn. Remember the reporter writes, the editor edits and the headliner writes the headlines. Each performs to the best of his knowledge and ability. Yet, in a technical matter, like the appraisal of millions in property, errors, misconceptions and faulty judgment may creep in.

For that reason we counsel you not to form judgment of the appraisal proceedings and their probable success or failure on what you glean from transient headlines.

## Commission Measure Passed in Michigan

Railway and public utility legislation for the session of the Legislature of Michigan of 1919 was reported to have been completed on April 25 by action of the House and Senate. Minor amendments to the Smith railroad and interurban rate bill were concurred in by the lower branch and the Upper accepted the House change in the Lemire-Wiley public utilities commission bill, making the commission consist of five members instead of three, and salaries \$7,000 a year instead of \$5,000.

The compromise utilities bill gives the new commission jurisdiction over every utility corporation in the State, except urban street railways. The railroad rate bill transfers control of interurban railways to the present State Railroad Commission, and the Lemire-Wiley bill transfers all power of the present commission to the new public utilities commission. The measures are now before the Governor.

## Relief Measures Killed

### Connecticut Legislature Votes Down Electric Railway Bills Recommended by State's Special Commission

The Senate of Connecticut on April 28 killed two of the most important measures planned to extend relief to the electric railways of the State and was reported to be ready to vote against the third. The measures defeated were the bridge payment and pavement payment reliefs included among the eight recommendations for legislation made by the special legislative commission appointed to investigate the condition of the carriers.

### OTHER PROPOSALS LOST

The bridge proposition lost by a vote of twenty-three to eight. The pavement proposition was defeated by a vote of twenty-four to eight. Two members of the special commission, Senators Dillon and Hough, led almost alone the fight for the bills.

In the House the special commission had some little satisfaction. The bill to allow the Hartford & Springfield Street Railway to use the tracks of the steam line was passed without opposition. But as the measure is useless in the face of federal opposition, the action of the House was not of any account.

Finally, in the Senate, the finance committee came in with a majority report against the proposition to grant the electric railways relief from taxation for two years, the companies to pay but 5 per cent interest instead of 9 per cent, as everybody else pays for arrears. The unfavorable report on this bill is regarded as a death blow to the hopes of the special commission to get through one important measure, as it seems certain the Senate will support the committee's unfavorable report.

### COMMISSION FINDINGS WERE FAVORABLE

The findings of the special legislative commission authorized to inquire into the status of the electric railways were summarized in the *ELECTRIC RAILWAY JOURNAL* for April 5, page 707. Following the presentation of the report of this commission, bills were introduced into the Legislature carrying out all the recommendations. In addition, an act was introduced providing that the State might lend not more than \$2,000,000 to the electric railways, if necessary, and further providing for bond issues to raise the money, with the stipulation that the electric railways pay one-half of 1 per cent more interest to the State than the State would pay on the bonds.



# Washington Railway & Electric Explains

## President Ham Answers Questions Before Civic Bodies— Sees Zone Fares Ahead

The Washington Railway & Electric Company, Washington, D. C., advertised in the *Star* of that city recently suggesting a conference with representatives of civic bodies. The company said that its policy of publicity meant more than mere talk. In fact, said the company, "it means a willingness and a desire to furnish the public with full information concerning our affairs in order that they (the public) may act intelligently upon the problems confronting us." The company further said that it would be pleased to meet representatives of trade or civic associations and explain the facts and figures presented by it to the Public Utilities Commission during the recent hearing on its application for additional revenues.

### MEETING HELD APRIL 18

Acting upon this offer, W. B. Westlake, president of the Federation of Citizens' Associations, on April 11 asked that the board room in the District building be reserved on the evening of April 18 for a meeting under the auspices of the Federation of Citizens' Associations, at which representatives of the company were given a proper opportunity to furnish information to a gathering of representatives of civic organizations and others. Mr. Westlake, in communicating this information to W. F. Ham, president of the company, said:

In my opinion this meeting should inaugurate a period of more cordial relations between your company and the public, which in this crisis is a most desirable thing to accomplish. There exists in the public mind a certain distrust and prejudice with regard to your company, which leads to intemperate discussion, and the purpose of the federation is entirely in line with its established policy of using its influence to expedite a just and fair conclusion in every matter affecting the relations between the people and the utility corporations.

Mr. Ham promptly accepted the invitation. Mr. Westlake then set about the matter in business-like fashion. With a view to expediting the work of the meeting he transmitted to Mr. Ham on April 16 a series of questions framed at a conference of representatives of the civic bodies and so drawn as to bring before the public meeting the information upon which to base an opinion. These questions were fifty-nine in number. Some typical questions taken from the list follow:

Has the company during the past six years ever been penalized or fined for disobeying any order, rule or regulation made by the Public Utilities Commission?

Does the company say it has furnished, and is now furnishing, the character of service required by said act of Congress?

What reasons does the company assign for the seeming popularity in service and management of the Capital Traction Company over that of the Washington Railway & Electric Company?

How can the people best co-operate with the company to secure "adequate, safe and reasonable service"?

Could the District of Columbia be best served by one street railway company?

Has the public been unreasonable in its attitude toward, or inordinate in its demands upon, the company?

Do you consider that the capitalization

of the Washington Railway & Electric Company represents actual value upon which the stockholders should receive dividends?

If not, what amount do you consider does represent actual value?

If the capitalization were reduced to an amount representing actual value as determined by a physical valuation fairly made and agreed to by the Public Utilities Commission and the company, and if a dividend of 7 per cent upon that capitalization were guaranteed by law, would not the road be upon a much better and more stable financial basis?

Are you familiar with the principles of the so-called service-at-cost system which has been adopted in certain other cities?

Do you know of any electric railway company which has put a zone system of fares into effect before trying an increase in the flat fare over 5 cents? This applies to city properties and not to companies which are chiefly or exclusively suburban or interurban.

What guarantee will the company give as to increased service if its rates are increased?

What were the strike losses in 1917?

How many platform men have been in service of the company less than a year?

How many in service more than five years?

At the meeting Mr. Ham said he was glad to submit to questions of every kind in a wholesome desire to bring about co-operation between his company and the public. He said he recognized the public as one of the three factors in railway operation, the other two being the employees and the investors in the property. Good service to the pub-

lic, fair wages to employees, and reasonable returns to investors were all, he said, that fair-minded men desired.

Mr. Ham answered many of the questions which had been prepared in advance and also replied to many informal questions asked by citizens present in the audience.

The trend of the questions indicated the greatest hostility to a zone system for Washington. Mr. Ham said his company was not wholly committed to this plan, but owing to the difference in the financial conditions of the two competing companies in the District, he saw no other equitable method of authorizing the further revenue, which it was imperative his company should have, if it is to continue giving service to the public. Personally he believed that a zone system would become general in this country. It was the only way of measuring the service given.

President Westlake said the federation wished to get all the information possible that it might take proper action and make fair recommendations to the utilities commission.

### A BELATED CONCESSION

Earl Godwin, writing in the *Washington Times*, called the effort of the company "a concession that is a belated recognition of the rights of the people." He said in part:

While this concession to voteless Washington would have been more valuable to the company if made two or three years ago, it is, nevertheless, a belated recognition of the fact that in the operation of public utilities the people generally have a most vital interest, not only in what they pay for the service they get, but the character of that service.

The time has passed, never to return, when utility corporations may disregard the good-will of the public or rightful requests of their employees. So has the time gone when organizations of employees may run things their way without consideration for the public or the rights of their employers.

While it is well to develop the past history of this company, the issue now is whether the company is entitled to further revenues. Money squandered in the past will not improve service now or in the future. However prejudiced the public may be over the bad record of the days gone by, it is perfectly willing to do justice. It wants to know for itself, though, just what all the facts are, so that it can measure the justice.

### Overtime Pay an Issue

The City Council of Seattle, Wash., has under consideration the demand of the motormen and conductors on the Seattle Municipal Railway for overtime at a rate equal to one and a half times the regular wage. Members of the railway union are forcing the matter. The right to pay overtime has been recognized by other departments of the city government, and employees have been paid at the rate of time and a half, heads of departments stating that it has been necessary to do this to induce men to put in extra time. Corporation Counsel Walter F. Meier, in an opinion to the finance committee, states that the city has authority to pay overtime, holding that overtime may be paid employees on a day wage or monthly salary under such limitations as the City Council would deem advisable for the protection of the interests of the public.



HE'S homeward bound, HIS job gloriously done.

But WE are not through. We must go over the top again before we wear the smile of victory.

Our government has an unpaid balance of several billions of war debts. This is the foe we must "mop up."

We can't come out of our battle loaded with HUN HELMETS—but WE CAN and SHOULD come out of it loaded with notes of the

## Victory Loan

## San Francisco Injunction Denied

Supreme Court Upholds Paralleling of United Railroad's Lines  
But Leaves Open Without Prejudice Question of Damages

The United Railroads of San Francisco has lost its application before the United States Supreme Court for an injunction against municipal railway competition until damages are paid. The decision, however, leaves the company free to seek damages. The privately-owned company claims \$6,870,130 of damages because of the construction of parallel outside tracks on Market Street and Church Street.

### CITY CAN COMPETE

In regard to the provision of the Civil Code of California that in no case must two railroad corporations use the same street for more than five blocks, the Supreme Court on April 21 held that this section of the code would seem to be a limitation of the powers conferred upon the Board of Supervisors by that and the adjoining sections, and not a contract by the State, or an authority to the board to contract, against a larger use of the streets. It most naturally is read as merely a general law declaring the present legislative policy of the State. (*Wheeling & Belmont Bridge Company vs. Wheeling Bridge Company*, 138 U. S. 287, 292; *Williams vs. Wingo*, 177 U. S. 601; *Wisconsin & Michigan Railway vs. Powers*, 191 U. S. 379, 387; *San Jose-Los Gatos Interurban Railway vs. San Jose Railway*, 156 Fed. Rep. 455, 458.)

But however this may be, the court continued, neither that section of the code nor the order of the Board of Supervisors granting the company's franchise purports in terms to prevent the city from itself establishing a parallel road. It is decided by *Knoxville Water Company vs. Knoxville*, 200 U. S. 22, that a covenant by a city not to grant to any other person or corporation a privilege similar to that granted to the covenantee does not restrict the city from itself exercising similar power, and it is assumed in that case that the principle already is established as to legislative grants. The city now is given power to establish and operate transportation service, and the United Railroads took the risk of judicial interpretation of its franchise and of this possible event.

### DAMAGE QUESTION LEFT OPEN

Therefore, the court concluded, so far as the harm to the company is an inevitable consequence of the city's doing what the former's franchise did not make it unlawful to do, the infliction of that harm is not a taking of the company's property that requires a resort to eminent domain. Regarding damages, the court then said:

We understand that the municipal road now has been built, and the question is whether to retain the bill for a claim of damages. But as that would require new evidence and practically would present a new case, and as further, with such light as we now have, the right to damages seems at least doubtful, we deem it sufficient

if the rights of the plaintiff, if any, in that regard, are reserved. The question is raised pointedly by Article I, Section 14, of the Constitution of 1879. That provides that "private property shall not be taken or damaged for public use without just compensation having first been made."

The plaintiff seems to argue that this section entitles it to preliminary compensation for any considerable pecuniary detriment that the city can inflict by the establishment of the new road, however lawfully it may act. Courts and judges have differed widely in their interpretation of this class of provisions in statutes of different sorts; but we should suppose, until otherwise instructed by the Supreme Court of the State, that the damage referred to in this section of the State Constitution in the main would be damage resulting from conduct that, like taking, would be tortious unless in proceedings under eminent domain or some law authorizing it on condition that damages be paid.

The public utilities of Illinois—traction, electric, gas, water and telephone companies—are to place their "after-war" case directly in the hands of their customers to whom they are responsible and let the public be the judge and jury.

Adopting as their slogan "There can be no prosperity in Illinois unless the public utilities are prosperous," the utilities have issued an invitation to the public to "put the spotlight on us." Their composite "case" is to be made known through the Illinois Committee on Public Utility Information, whose organization has just been announced. This committee, with offices in the Bedford Building, 203 South Dearborn Street, Chicago, is to operate "under the auspices of the Illinois Electric Railway Association, Illinois Gas Association, Illinois State Electric Association, and other public service organizations, and in the interest of their customers, investors and employees."

### ASK ONLY JUST TREATMENT

With the budgets of Illinois public utility companies, from Cairo to the Wisconsin border, calling for \$70,000,000 of after-war rehabilitation work and extensions this year—a program which will do much to relieve business hesitation—the utilities will be unable to go ahead unless their credit, which means ability to obtain the necessary funds, is unimpaired. Their expenditures this year, alone, would mean the spending of \$60,000,000 in excess of the \$10,000,000 which the State plans to spend in its great good roads project. And in the five-year period of road making, during which the State will spend \$50,000,000, the public utilities' plans call for the expenditure of \$450,000,000, or nearly eight times as much. They are asking only for "sane scientific, non-political and just treatment," such as will enable them to perform the

As to crossing the plaintiff's tracks we are inclined to agree with the District Court that the plaintiff's franchise must be understood to be subject to this incident, and that a taking by eminent domain was not necessary. (*Market Street Railway vs. Central Railway*, 51 Cal. 532, Consolidated Traction Company vs. Southern Grant & Maplewood Traction Co., 56 N. J. Eq. 669, 574, et seq. 3 Dillon, Municipal Corporations, fifth edition, Section 1241, p. 1933.) If we are wrong and if the crossings or the manner of operating the parallel tracks should give or has given rise to any claim, the decree will be without prejudice to such claim. We assume in accordance with the company's evidence and argument that the damage may be considerable and we think it just to leave open whatever can be left open, but at present we cannot say that the loss is or will be of such a character that it must be paid for, and we are satisfied that it is not such as to call for equitable relief.

The arguments presented in the briefs submitted by the company and the city in this case were noted in the *ELECTRIC RAILWAY JOURNAL* of April 12, page 750.

## Illinois Public Utilities Wake Up

Go to the Public in Bold Publicity Program—Invite the Spotlight—  
Big Capital Investments Planned

services imposed by their intimate relationship with the every-day life of every man, woman and child in the State and the communities in which they operate.

The purpose of the committee, is outlined in a public statement in part as follows:

The committee proposes to do now for the public utilities what the railroads failed to do until they were almost strangled, namely, to put before the people of Illinois, by every possible means, the economic facts of the public utility industry, as an industry. This takes in the small town light plant as well as the big city electric company or electric railway system; independent and "farm-trail" telephone companies, as well as the Bell interests.

### EVERY CITIZEN IS INTERESTED

Every person who uses a telephone, rides on a street car or cooks or reads with gas or electricity is entitled to know the facts concerning these companies.

Without efficient utilities, cities and towns cannot prosper, and utilities cannot be efficient without prosperity. They must pay their bills for improvement of services and, concerned, probably more than any other element, because it knows that the high wage scales necessitated during the war by high living costs contained the seed of ruin unless the utilities are given just treatment.

The public utility companies have been seriously affected by the war. With tremendous wage increases necessitated by the high cost of living, which shows but little, if any, abatement, and prices of materials up not less than 100 per cent and in some instances three times that, they have not had consideration commensurate with their dues.

Upon their ability to earn a just wage depends their ability to spend money for wages, for improvement of services and for new building, the result of which means improvement of the community in which they operate. It is to the interest of every citizen that the public utility companies, upon which he depends so much, shall be fairly treated and that their facilities shall be developed to the utmost. It is only through this that he can obtain the service which should be his.

### WANT PUBLIC TO KNOW FACTS

Affecting the credit of the light, heat, railway, power or telephone companies in any city or town immediately means inferior service. It cannot be otherwise. The company cannot furnish something it has not the money to buy for the customer. No reasonable man will contend that capital is not entitled to a fair wage, as well as labor, or that the investments which go to build up and make a community should not

be as well protected as the home a man and his wife have bought with their savings. The situation is not a pleasant one, but is one which must be met squarely in a calm, scientific, non-political and just way, without prejudice or demagoguery.

If the utilities are not to be strangled, the best preventive is public knowledge of the economic facts which go to make the tremendous factor they are in the State's industrial and economic life. Unless they prosper, there will be no prosperity in Illinois. Just treatment is essential to the maintenance of good service and to the protection of investors. The undermining of the credit of the utilities cannot fail to have far-reaching effects upon general credit and business prosperity, for their credit cannot be placed in jeopardy and the effect localized or even restricted to these companies.

The utilities believe open and above-board exploitation of the economic facts of the industry is sound policy for now and the future. They are content to submit their case to their customers, believing that to be the road to just treatment and freedom from unwarranted burdens that would prevent adequate service and forestall the great development program which must be carried out to meet the State's needs.

## Public Ownership Dead

**Thirteen Electric Railway Bills Reported Adversely to Massachusetts House by Legislative Committee**

Adverse reports on thirteen electric railway bills have been made in the Massachusetts House by the legislative committee on street railways, the most important bills being those relating to public ownership.

The bill providing for public control of all electric railways except the Boston Elevated Railway and the Bay State Street Railway having \$300,000 capital or more which was the subject of long and continued hearings before the committee was referred to the next General Court. Leave to withdraw was reported on the petition that cities and towns may acquire and operate electric railways.

Reference to the next Legislature was reported on the bill providing state ownership of electric railways, and leave to withdraw was given on the petition for a referendum on the same question. The committee still has the bill relieving companies of paying taxes before it, as well as the so-called "50-60" bill providing for municipal aid for electric railways, to be extended through a tax levy.

Leave to withdraw was also reported on the following bills: To provide a 5-cent fare within a 5-mile radius of the State House; to discontinue the public operation of the Boston Elevated Railway; to authorize the Bay State Street Railway to acquire the rights of the Boston Elevated Railway in East Boston and the East Boston tunnel; to prohibit companies from carrying more passengers than can be seated; to take dividends on common stock of the Boston Elevated Railway as a basis for fares; to provide a single electric railway fare within the city limits of Boston; to provide further legislation in regard to the transportation of school children in Metropolitan Boston.

The bills for improved transportation in the Metropolitan district and for the incorporation of the Boston Rapid Transit Company have also been referred to the next Legislature.

## Detroit Conference May 9

**Mayor, Street Railway Commission and Railway Representatives Asked to Discuss Railway's Future**

The Common Council of Detroit, Mich., will invite Mayor Couzens, the members of the Street Railway Commission and representatives of the Detroit United Railway to a conference on May 9 to consider the local electric railway situation, which has again become an issue as the result of the defeat of the municipal ownership proposal at the recent election.

Subsequent to this conference it is purposed by the Council to hold a public hearing on the matter of electric railway transportation at which citizens will be invited to suggest ways and means to get adequate service for Detroit.

The Street Railway Commission has recently received replies from Henry Ford, Detroit, and Fielder Sanders, Street Railway Commissioner of Cleveland, both of whom had been asked for information on transportation affairs. Mr. Sanders says he will visit Detroit prepared to explain the Cleveland service-at-cost plan. Henry Ford, however, in his letter expressed his hesitancy at co-operating with the Street Railway Commission until he shall be sure that it "can claim to represent Detroit." Mr. Ford's letter read in part as follows:

It is my belief that the commission has taken on itself a great responsibility in assuming that the recently submitted purchase plan was defeated because of state-mismanagement by Charles E. Sorenson, which would indicate that the people of Detroit are not capable of deciding matters of such importance for themselves.

Reputation by the voters of the railway plans as submitted makes it seem questionable in my mind whether or not you can claim to represent the people of the city of Detroit.

When you are able to furnish me with reasonable assurance of this fact, I will be glad to co-operate with you in working out the development of a new type of gas or electric car for street railway purposes.

However, the question of whether or not we will co-operate with you or any other accredited representative of the city of Detroit will not deter us in any way from carrying out what we have already undertaken in such development, and when we are ready to demonstrate the merits of the new type of car it will be left for the judgment of the citizens of Detroit.

In connection with Mr. Ford's letter there is need for relating a little local Detroit history in order that events may be set in the proper perspective. The announcement about the new Ford street car was made almost on the eve of the municipal ownership election. There are some that professed to see in this a move by Mr. Ford against his old associate, Mayor Couzens. No one will probably ever know what the effect was of the agitation about the car on the election result, but there is no room left for guessing about the rebuke to the commission contained in Mr. Ford's letter to that body. On the other hand it would seem that the commission has rendered it imperative for Mr. Ford to make plain just what an anxious world may expect from the new Ford car. So far there has been little more tangible about the car than words.

## News Notes

**Receivers Refuse Wage Request.**—The receivers of the Pittsburgh (Pa.) Railways have refused the request of motormen and conductors for an advance of 12 cents an hour in wages. They assert the financial condition of the company will not permit the increase in wages. Concessions were made in improving working conditions and other regulations that would not involve wage costs. All employees of the company are to be transported free on its own lines.

**Paying Back Wages in Buffalo.**—The first payment of \$50,000 of the \$225,000 due the employees of the International Railway, Buffalo, N. Y., as back wages as the result of the award of the War Labor Board was made on April 28. In addition to the union platform employees, officials of the company and other employees in the offices are represented in the payments of the back wages. The second installment of \$50,000 will be paid on Nov. 14, 1919; the third installment of \$25,000 on Dec. 21, 1919, and the last installment of \$100,000 on Jan. 28, 1920.

**A Union Plea for Leniency.**—Efforts by representatives of the local railway union to obtain mitigation of the punishment imposed upon employees of the Seattle (Wash.) Municipal Railway who joined in the recent general strike, has brought a promise from Mayor Ole Hanson that he will take the matter up at an early date and give the men an opportunity to be heard before a conference of heads of various city departments. Employees in the railway department who quit their jobs during the strike were penalized, by losing their annual two weeks' vacation and being suspended for fifteen days. The union is seeking to substitute the two weeks' vacation for the fifteen day lay-off.

**Strike in McAlester Settled.**—Settlement of labor troubles which threatened to cut off light, power and transportation from the people of McAlester, Okla., and neighboring towns, is reported in a telegram to the Labor Department by Commissioner Robert McWade of the Adjustment and Conciliation Service. The trouble arose over discharge of certain skilled workers. A section of the local union of railway men on the Pittsburg County Railway took up their cause and formed a new organization, later going on strike. The trouble was spreading to workers in other fields when it was agreed to submit all differences to a board of arbitration. In its decision the board supported the Amalgamated Association of Street & Electric Railway Employees of America.

# Financial and Corporate

## Receivership Is Limited

Temporary Appointments at Chattanooga Cover Only Railway Lines—  
Further Argument May 17

John S. Graham, Philadelphia, Pa., and Percy Warner, Nashville, Tenn., as noted very briefly in the ELECTRIC RAILWAY JOURNAL for April 19, page 800, have been appointed by Judge E. T. Sanford as temporary receivers of the Chattanooga Railway & Light Company, Chattanooga, Tenn. A decree entered at Knoxville limits their scope as such pending a hearing before Judge Sanford on May 17.

### DECREE A COMPROMISE

For the time being the receivership extends only to the railway system, properties connected with the light department being expressly excepted pending litigation on that phase of the original petition. The preliminary decree is the result of a compromise agreement which makes the matter of including the light department of the company as subject to mortgages covering the railway properties dependent upon a decision after that question has been fully argued and testimony heard on that point.

The original application of the Commercial Trust Company, Philadelphia, Pa., the petitioner, sought to have all resources of the Chattanooga Railway & Light Company included in the receivership. The light department is closely allied with the Tennessee Power Company, which even in normal times furnished power to the railway.

The Chattanooga Railway & Light Company was in its inception a consolidation of the railway system and the light system and on that account the holders of the mortgages, now sought to be foreclosed, are seeking to have the light and power equipment included in the receivership. Resistance to that feature of the original petition has been most determined and in the hearing to come it will probably be the chief question for argument.

### CONSOLIDATION IN 1909

The Chattanooga Railways, which was the successor of the Chattanooga Electric Railway, was owned by the Grahams of Philadelphia. The Chattanooga Electric Company was a separate corporation and under an entirely different ownership. When the E. W. Clark interests went to Chattanooga in 1909 they made their investments on the theory that the two should be consolidated, and that was effected before the new corporation was organized. The name of the new organization thus became the Chattanooga Railway & Light Company.

As a part of the compromise under which the temporary receivers are named and their scope limited to the railway system, Judge Sanford protects them by issuing an injunction requiring the Chattanooga Railway & Light Company to continue to provide the power for operation of the cars.

## Change in Control in Iowa

Minority Interests in Iowa Southern Utilities Company Take Over Control

David G. Fisher & Company, Davenport, Ia., public utility engineers and holders of a minority interest in the Iowa Southern Utilities Company, which furnishes electric power to thirty Iowa towns, operates 33 miles of interurban railway and runs the Centerville railway, gas, heating and electric light plants, have purchased the holdings of Frank S. Payne and D. C. Bradley in the company. Mr. Payne, who has been general manager, will remain with the company as director and general counsel. It is understood that the transaction involved in the neighborhood of \$450,000.

The formal transfer of control will be made on May 15. J. C. Johnson, new secretary and treasurer of the Fisher Company, will be the new general manager of the properties. Before becoming affiliated with the Fisher Company he was superintendent of the Fiske Street station in Chicago. Ernst Jacobsen, vice-president of the Fisher Company, will have a prominent part in the active administration of the company.

The Fisher Company was organized in Davenport in 1909 and soon began to purchase and operate public utility plants. Most of the company's holdings are located in Iowa. The Interurban lines, from Centerville to Albia and Mystic, are important coal carriers, delivering the output of thirty mines to the Burlington, the Rock Island and Minneapolis & St. Louis Railroads.

The Iowa Southern Utilities Company was formed by a consolidation of Payne, Bradley and Fisher interests in the fall of 1916. The companies which it controls include the Centerville Light & Traction Company, Centerville Electric Company, Centerville Gas Company, Leon Electric Company, Mount Ayr Light & Power Company, Lennox Electric Company, Clearfield Electric Company and the Blockton Light & Power Company.

The interurban line from Centerville to Mystic was built in 1909. The interurban from Centerville to Albia, the successor of the old Albia & Centerville Railway, was opened for operation in the year 1914.

## Deficit in New Jersey

Public Service Railway Went Behind \$302,115 in March Over Same Month a Year Ago

The net income of the Public Service Railway, Newark, N. J., for March showed a deficit of \$302,115, as set forth in a statement filed by the company on April 17 with the Board of Public Utility Commissioners. The net income for March, 1918, was \$73,325, so that the variation between the two months amounts to \$375,440 in income account.

Revenues from transportation during March amounted to \$1,600,734, as compared with \$1,523,796 in March, 1918. The passenger revenue increased from \$1,519,792 in March, 1918, to \$1,596,965 last month. The total operating revenue, as between the two months, increased from \$1,561,198 to \$1,641,076. Railway operating revenue deductions increased from \$1,060,736 to \$1,511,335, so that railway operating income was reduced from \$500,461 to \$129,741, and total operating income from \$501,129 to \$129,860.

Gross income was reduced from \$506,005 to \$135,123, and income deductions increased from \$432,679 to \$437,239. Income deductions in detail for last month were as follows: Leased roads, \$237,022; miscellaneous rents, \$8,960; interest on funded debt, \$179,005; interest on unfunded debt, \$7,333; amortization of discount on funded debt, \$1,342, and miscellaneous debits against income, \$3,596.

### SURPLUS DECREASED \$302,115

In March, 1918, the surplus of the company showed a net increase of \$74,128, while last month it showed a net decrease of \$302,115. The percentage of operating expenses to operating revenues, which was 59.5 for March, 1918, was increased to 83.1 last month, and the percentage of operating expenses (including taxes) to operating revenues, increased from 67.9 to 92.1.

A comparative statement of operating revenue deductions for March, 1918, and last month shows the following increases: Ways and structures, from \$114,961 to \$154,271; equipment, from \$91,969 to \$221,412; power, from \$183,478 to \$224,140; conducting transportation, from \$409,137 to \$601,640.

Total operating expenses increased from \$229,308 to \$1,362,954, and total operating revenue deductions from \$1,060,736 to \$1,511,335.

The company carried a total of 27,388,360 passengers last month, of whom 22,283,107 were revenue passengers and 5,105,253 transfer passengers. The passenger revenue amounted to \$1,547,832 from cash fares and \$49,133 from revenue transfers.

Passenger traffic figures for March, 1918, were not given in the company's March report for the reason that in March of this year a six-day strike disrupted the service and figures as to traffic for that month would be in no way comparable to figures covering traffic in March, 1918.

## Net Income Almost Doubled

**Chicago-North Shore Line Enjoys Sixty-five Per Cent Gain in Revenues, Partly Due to War Traffic**

During the year ended Dec. 31, 1918, as compared to the one preceding, the Chicago, North Shore & Milwaukee Railroad, Chicago, Ill., gained \$255,619 or 91.5 per cent in net income. This unusual showing was brought about largely by the fact that the percentage advance in operating revenues kept practically on even terms with that in operating expenses.

war activities in the various cities and also at the government posts served by the company. The operating expenses rose because of the large increases in wages and materials. The advance would have been accentuated if the increased price of coal had been figured in the cost of power consumed, but fortunately the major portion of the power, which was purchased under contract with the Public Service Company, was not advanced in price. On the Wisconsin end of the road the power was furnished by the Milwaukee Electric Railway & Light Company, which owing to the increased cost of labor

rentals due. The total rentals and payments now due and payable to the petitioning lessor companies under the terms of the leases are said to amount to \$331,925.

The prayer of the petition is for a decree of the court declaring the leases expired on April 21 by the default of the Rhode Island Company; that the lessor petitioners be declared entitled to possession of all premises and properties involved in the terms of the leases and that the receivers be directed forthwith to make payment in full of all sums named as due the lessor petitioners; that the receivers be directed forthwith to pay in full all sums due under the war revenue act of 1918 and all taxes to the proper persons. The court is also asked to direct the receivers to pay the petitioners for the use of their railway property until it is turned over into the possession of the lessors.

INCOME STATEMENT OF CHICAGO, NORTH SHORE & MILWAUKEE RAILROAD FOR CALENDAR YEARS 1917 AND 1918

	1918		1917	
	Amount	Per Cent	Amount	Per Cent
<b>Operating revenues:</b>				
Passengers and special car.....	\$2,678,693	92.4	\$1,629,306	93.0
Freight and express.....	151,728	5.2	105,801	6.0
Miscellaneous.....	69,553	2.4	16,266	1.0
<b>Total.....</b>	<b>\$2,899,975</b>	<b>100.0</b>	<b>\$1,751,373</b>	<b>100.0</b>
<b>Operating expenses:</b>				
Way and structures.....	\$302,525	10.5	\$161,994	9.2
Equipment.....	172,183	5.9	81,999	4.7
Conducting transportation.....	630,042	22.4	395,455	22.6
Power.....	354,173	12.2	250,549	14.3
Traffic.....	35,100	1.2	27,857	1.6
General and miscellaneous.....	342,015	11.8	196,838	11.2
<b>Total.....</b>	<b>\$1,856,038</b>	<b>64.0</b>	<b>\$1,114,512</b>	<b>63.6</b>
<b>Net operating revenue.....</b>	<b>\$1,043,937</b>	<b>36.0</b>	<b>\$636,861</b>	<b>36.4</b>
Taxes assignable to operations.....	185,821	6.4	95,680	5.5
<b>Operating income.....</b>	<b>\$858,115</b>	<b>29.6</b>	<b>\$541,181</b>	<b>30.9</b>
Non-operating income.....	9,469	0.3	4,858	0.2
<b>Gross income.....</b>	<b>\$867,584</b>	<b>29.9</b>	<b>\$546,039</b>	<b>31.1</b>
Deductions from income.....	332,506	11.4	266,580	15.2
<b>Net income.....</b>	<b>\$535,078</b>	<b>18.5</b>	<b>\$279,459</b>	<b>15.9</b>

In 1918 the total operating revenues showed a gain of \$1,148,602 or 65.6 per cent, the largest amount coming from passenger and special car revenues, which rose \$1,049,387 or 64.4 per cent. The freight and express revenues also displayed the very substantial gain of \$45,928 or 43.4 per cent, while the miscellaneous revenues advanced \$53,287 or 327.6 per cent.

The jump in operating expenses amounted to \$741,526 or 66.5 per cent. All the items in the operating-expense group shared in the rise, the respective amounts and percentages being as follows: Maintenance of way and structures, \$140,531 or 86.7 per cent; maintenance of equipment, \$90,184 or 109.9 per cent; conducting transportation, \$254,587 or 64.6 per cent; power, \$103,624 or 41.3 per cent; traffic, \$7,443 or 26.9 per cent, and general and miscellaneous, \$145,157 or 73.7 per cent.

The effect of the nearly equal percentage increase in operating revenues and expenses was a gain in net operating revenue of \$407,076 or 63.9 per cent. Taxes increased at a greater rate, by \$90,141 or 94.2 per cent, but income deductions at a less rate, by \$65,926 or 24.7 per cent. The net income for the year, therefore, rose \$255,619 or 91.5 per cent. The surplus balance on Dec. 31, 1918, was \$855,811 as compared to \$320,732 the year before.

The heavy increase in gross operating revenues was partially due to the large amount of traffic produced by the

and coal made a substantial advance in accordance with the order of the Wisconsin Railroad Commission.

During 1918 the Chicago, North Shore & Milwaukee Railroad expended for additions and betterments and for reconstruction the sum of \$511,639. The balance sheet total for cost of road equipment and property was \$13,902,262 at the end of 1918.

In spite of the big increase in traffic, the 1918 accident record showed marked improvement. Employee accidents in 1918 decreased 17.4 per cent as compared with those of 1917; employees' disability accidents decreased 38.3 per cent; lost time on account of employee accidents decreased 34.3 per cent; public accidents decreased 45.4 per cent, and property damage (public) decreased 44.8 per cent. The total accidents fell off 34.1 per cent.

## Lease Abrogation Hearing on May 14

Presiding Justice Tanner in the Superior Court has designated May 14 as the date for a hearing on the petition of Edwards & Angell, counsel for the Union Street Railroad, the Pawtucket Street Railway, the Rhode Island Suburban Railway and the United Traction & Electric Company, asking the court to declare the leases of their properties to the Rhode Island Company to have expired on April 21 because of default in payment of

## Pittsburgh Results Improve

In its issue of May 1 the *Wall Street Journal* reviewed briefly the operations of the Philadelphia Company, Pittsburgh, which includes the Pittsburgh Railways among its subsidiaries. That paper said:

Earnings of Pittsburgh Railways are not included in current statements. The traction company is still in the hands of receivers. The Philadelphia Company operates several traction lines, aside from the last mentioned company, and earnings of these companies show a substantial increase over 1918. The Pittsburgh Railways is charging a 7-cent fare on all its lines, an advance of 2 cents over the 5-cent rate in effect a year ago. It is believed that the company will shortly be able to work out of its difficulties, due to the increase in fares. Bondholders who contended that the Philadelphia Company was liable for interest on underlying bonds of the railway company in receivership, received a setback recently when the court ruled that no liability attached to the parent company.

## Providence Company Doing Better

The deficit of the Rhode Island Company, Providence, R. I., for January, February and March was \$263,055, a decrease of \$4,535 from the deficit for the corresponding period in 1918. Figures filed at the office of the Public Utilities Commission indicate that the deficit for the month of March was \$91,463, the total operating revenue for the month being \$552,029, as compared with \$507,727 for February. The statement filed by the company notes a further decrease in car service, 148,290 fewer car-miles being run than in March, 1918. The net operating income showed a decrease of \$6952 and the total net income a decrease to the extent of \$6,453.

Chairman Bliss of the Public Utilities Commission explained that the company's statement indicated that the increase in fares permitted had reduced what would otherwise have been an appreciable increase in the company's deficit and if it were not for the increased operating expenses due primarily to the advance in wages of employees, the company would be operating at a profit.

## Indianapolis Operating Net Drops Nearly 20 Per Cent

The gross earnings and operating expenses of the Indianapolis Traction & Terminal Company, lessee of the Indianapolis Street Railway, for the years 1918 and 1917, and the changes for this period, were as follows:

	1918	1917	Change
Gross earnings....	\$3,573,499	\$3,654,633	—\$81,134
Operating expenses.....	2,417,407	2,212,012	+205,394
Net earnings from operation.....	\$1,156,092	\$1,442,620	—\$286,528

The decrease of 2.2 per cent in earnings and the increase of 9.3 per cent in operating expenses shown in the foregoing figures were the result of war prices and the inability of the company to secure an increase in its rate of fare until October, 1918. The combined effect was a loss of 19.9 per cent in net earnings from operation for 1918 as compared to 1917.

The statement of maintenance of way and structures and of maintenance of equipment is given below:

	1918	1917	Change*
Maintenance of way and structures..	\$298,434	\$377,384	—\$78,950
Maintenance of equipment....	329,144	233,889	+95,255
Total maintenance.....	\$627,579	\$611,273	+\$16,305

Thus, while there was a decrease of 20.9 per cent in expenditures for maintenance of way and structures in 1918 as compared with 1917, there was an increase of 40.7 per cent in expenditures for maintenance of equipment, owing in a large measure to the increased cost of labor and material. The total expenditures for maintenance in 1918 exceeded the expenditures in 1917 by 2.67 per cent. The decrease in expenditures on account of maintenance of way and structures was due, to some extent, to the scarcity of labor and the difficulty in securing the needed materials.

## New York Subway Deficits Grow

Figures compiled by the Public Service Commission for the First District of New York show that the total deficit of the Brooklyn Rapid Transit Company under the dual contracts providing for rapid transit to March 1 last was \$2,729,147 and that the city's deficit was \$9,255,934. These deficits have been growing since the contracts were made on Aug. 4, 1913, and in the case of the city the deficit cannot be reduced until that of the company is entirely wiped out. In both instances the deficits are cumulative.

A comparative statement of the figures for February of 1919 and 1918 discloses that the total reductions for rents, taxes, depreciations, etc., for 1919 were \$1,155,000, and for 1918 they were \$960,000; the total revenues for the same month in 1919 amounted to \$1,154,000 and in 1918 to the sum of \$968,000.

It is pointed out that the city's interest due on the subway fund for

February, 1919, was \$211,000 and in 1918 it was \$117,000. The total deficit for February, 1919, in revenues necessary to take care of all the charges was \$390,000, and in 1918 it was \$248,304. In February, 1919, the revenues increased over the same month the year before \$186,000.

The poor results are attributed directly to the additional costs due to the war.

## Another Rhode Island Reorganization Step

The Rhode Island Legislature in its closing hours passed the bill chartering the United Electric Railways. When the bill came up for consideration in the House of Representatives, the Democratic minority opposed the passage of the measure, characterizing it as loosely drawn. The Republicans, however, voted down the opposition and the bill was sent to the Senate. In the latter body it was held as a weapon to secure concessions of a political character from the House, but was finally passed without opposition.

The bill makes possible a reorganization of the Rhode Island Company by the establishment of one company owning all its properties in place of the present leasing arrangement.

When the reorganization plans have matured sufficiently to warrant the surrender of the charter, the incorporators, the Governor, Commissioner of Banking and Tax Commissioner will turn the charter over to the reconstituted company.

## Success of Enactment

The residents and cottagers of Ocean City, N. J., are greatly pleased with the signing by Governor Edge of a bill that gives relief to the town in the way of railway service during the coming summer. In consequence the line of the Ocean City Electric Railroad will again be put into operation.

The new law authorizes municipalities of the fourth class in case of the abandonment or refusal of a railway to operate, to present a petition to the Court of Chancery for the appointment of a trustee to run the lines upon the terms and conditions that may be imposed by the chancery court. Such cities have a right to advance a sufficient amount of money for the operation, the municipality to be repaid the money advanced, together with taxes.

The person appointed to act as trustee is to furnish a bond for the faithful performance of his duties and to render an account of all money received and expended by him.

Some time ago the committee representing the Ocean City Electric Railroad notified the city that it was unable to meet operating expenses and offered to sell the road for \$84,000. Mayor Champion was unable to raise the necessary amount among the residents of the town and the bill in the Legislature was the result. The terms of operation will be made known soon by Mayor Champion.

## Preparing for Inland Empire Foreclosure Sale

The Hill interests, controlling the Great Northern, Northern Pacific and other railway systems, may buy the Spokane & Inland Empire Railway at the receiver's sale some time in June or early in July.

This is the possibility advanced by George H. Taylor, vice-president of the investment house of E. H. Rollins & Sons, Chicago, representing bondholders of the Inland system. Mr. Taylor and H. D. Whitehouse, the firm's engineer, arrived in Spokane recently to inspect the Spokane & Inland Empire property. The former is a member of the bondholders' protective committee, which holds \$3,300,000 of the company's bonds. He is reported to have said:

The Hill interests will possibly buy the property at the auction. They have \$12,000,000 invested in it, and own 55 per cent of the stock, I believe. The sum of \$8,697,556 is due the Great Northern and its subsidiary company, the Northwestern Investment Company. I have not heard that they have sent any men here to investigate, but in view of these facts, it is possible that they will be the purchasers.

Mr. Taylor declared that the bondholders would not attempt to operate the system.

## Financial News Notes

**Jackson Wants Local Ownership and Control.**—Business men and prominent citizens of Jackson, Miss., are reported to be organizing for the purpose of submitting a bid for the property of the Jackson Light & Traction Company, which went into the hands of receivers recently.

**Wants to Abandon Interurban.**—The Union Savings Bank & Trust Company, as trustee for the note issue of the Cincinnati & Columbus Traction Company, Cincinnati, Ohio, on April 17 filed an application with the Ohio Public Utilities Commission for authority permanently to abandon and dismantle the company's entire interurban line from Cincinnati to Hillsboro, 54 miles.

**Change in Name by Maine Company.**—On April 1, the name of the Rockland, Thomaston & Camden Street Railway was changed to Knox County Electric Company. All directors and officers of the corporation remain the same, the name only undergoing change. The affairs of the company will be managed and carried along as previously, but under the new name.

**Successor Company at Selma.**—A certificate of incorporation of the Selma (Ala.) Electric Company has been filed by Charlotte L. Waters, Gertrude E. Abbott, D. L. Gerould, and Hugh Mallory, with D. L. Gerould, of Warren, Pa., named as president. Hugh Mal-

lory is named as secretary-treasurer and general manager. It is understood that the new company is formed as the successor to the Selma Traction Company, the property of which will be sold at auction in May.

**Dividend on Common Stock Passed.**—The directors of the Twin City Rapid Transit Company, Minneapolis, Minn., have decided to pay no dividends on the common stock of the company for the first quarter of 1919, according to announcement by Horace Lowry, president of the company. Net income for the month of March, 1919, shows a decrease of 49.17 per cent as compared with March, 1917. For the three months of 1919, the decrease is 58.12 per cent as compared with the 1917 period.

**Hearing on Funding Issue.**—Testimony was taken by the Board of Public Utility Commissioners on April 29 on the application of the Trenton & Mercer County Traction Corporation, Trenton, N. J., for authority to issue \$40,000 of bonds for the purpose of funding the cost of the Trenton Junction extension of its line. The application was taken into conference and a decision will be announced later. The company is now building a shorter line to Trenton Junction and will continue the road through the village. At the present time the line runs to the outskirts of the town.

**Holding Company Not Responsible.**—Judge Charles P. Orr in the United States District Court at Pittsburgh, Pa., on April 10 dismissed the suit brought to hold the Philadelphia Company responsible for the interest due upon bonds of the United Traction Company, a subsidiary of the Pittsburgh Railways, which is in the hands of receivers. The plaintiff wished the court to make the bonds an obligation of the Philadelphia Company, which controls the Pittsburgh Railways and

is in turn controlled by the United Railways Investment Company.

**Estimating Municipal Line's Requirements.**—Thomas F. Murphine, Superintendent of Public Utilities of Seattle, Wash., has filed an estimate with the City Council of cost of operating the Seattle Municipal Railway during the month of May. He places the sum at \$302,645. The total is approximately \$60,000 more than the April estimate, the difference including an increase in the transportation department, due, it is claimed, to the operation of more cars, and expense of making improvements in the property. According to Mr. Murphine's report, the increase in car-hours compared to April, 1918, will be about 1000 a day. This will increase the wage cost approximately \$1,000 a day.

**Abandonment Authorized.**—The Public Service Commission for the Second District of New York on April 17 granted the petition of the Yonkers Railroad for permission to abandon that portion of its lines within the village of Hastings. The appeal made by the railroad for the abandonment of the Hastings line was contained in the petition filed by the company some time ago in which the railroad sought to abandon portions of several of the Yonkers lines. On April 14 counsel for the railroad filed a request with the commission to withdraw its petition, but only as regards the Yonkers lines and excepting the Warburton Avenue line, north of the Yonkers city line. Corporation Counsel Walsh of Yonkers filed a formal consent to the discontinuance of these abandonment proceedings.

**Consolidation of Receivership Suits Opposed.**—Attorneys Ephraim Caplan and Randolph Laughlin, representing petitioners in two of the receivership suits against the United Railways, St. Louis, Mo., are opposing the attempt of litigants against the company to con-

solidate the four actions pending for the appointment of a permanent receiver. They contend the appointment of a receiver in one of the petitions carries with it a receivership in all the cases pending. Rolla Wells recently was appointed temporary receiver in the suit of Samuel W. Adler, a bondholder. Attorneys for the United Railways joined in the request for the appointment of a receiver in that suit. They resist the naming of a receiver in the other suits, however. In opposing the motion for a blanket receivership Attorney Priest for the company declared the suits pending against the railway company are diverse in nature, and have for their object widely different purposes.

**Commission Approves Abandonment.**—The California Railroad Commission has granted the request of the Pacific Electric Railway for authority to abandon service and remove tracks and overhead on its Brockton Avenue line in Riverside, but the abandonment is limited to that part of the line south-erly of Jurupa Avenue. General use of privately-owned autos is held by the railway people to have caused a marked falling off in the patronage of the line. Investigation by the commission's examiner showed that in the territory north of Jurupa Avenue served by the Brockton line, 42 per cent of the homes possessed autos. In the homes without autos there are 178 adults and ninety-three school children. In the homes with autos there are 167 adults and fifty-five school children. For the reason that 271 patrons of the line would be seriously inconvenienced by the cutting out of service in this section, the commission denies the company's application so far as it concerns this district, but without prejudice to a future application provided future patronage, coupled with economical operation by the railway company through the use of one-man cars, shows the need for reopening the case.

## Electric Railway Monthly Earnings

BATON ROUGE (LA.) ELECTRIC COMPANY					GALVESTON-HOUSTON ELECTRIC COMPANY					GALVESTON, TEX.							
Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income	Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income	Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Feb., '19	\$28,440	\$17,129	\$11,311	\$3,949	\$7,362	1m., Feb., '19	\$222,153	\$179,790	\$42,363	\$40,431	\$1,932	1m., Feb., '19	\$72,881	\$53,385	\$19,496	\$17,792	\$1,704
1m., Feb., '18	19,847	10,644	9,203	3,486	5,717	1m., Feb., '18	181,822	125,615	56,207	56,207	\$0	12m., Feb., '19	2,779,968	1,953,031	826,937	475,332	351,605
12m., Feb., '19	286,145	159,179	126,966	40,014	86,952	12m., Feb., '18	2,152,766	1,425,212	727,554	455,470	272,084	12m., Feb., '18	23,407	\$12,514	\$10,962	\$10,962	\$0
<b>CAPE BRETON ELECTRIC COMPANY, LTD., SYDNEY, N. S.</b>					<b>HOUGHTON COUNTY TRACTION COMPANY, HOUGHTON, MICH.</b>					<b>JACKSONVILLE (FLA.) TRACTION COMPANY</b>							
1m., Feb., '19	\$42,963	\$33,900	\$9,063	\$6,667	\$2,396	1m., Feb., '19	\$25,504	\$17,142	\$8,362	\$4,999	\$3,373	1m., Feb., '19	\$78,365	\$69,658	\$8,707	\$18,014	\$9,307
1m., Feb., '18	36,294	\$28,999	7,295	6,534	761	1m., Feb., '18	26,644	\$19,126	7,518	5,075	2,443	1m., Feb., '18	66,000	\$47,244	18,756	17,030	1,726
12m., Feb., '19	530,436	\$401,011	129,425	78,832	50,593	12m., Feb., '19	313,958	\$212,082	101,876	60,151	41,725	12m., Feb., '18	716,590	\$488,380	228,210	190,752	37,458
12m., Feb., '18	471,213	\$317,849	153,364	78,618	74,746	12m., Feb., '18	345,198	\$219,814	125,384	61,042	64,342	12m., Feb., '18	7,190,240	\$5,745,515	1,444,725	1,458,385	1,458,385
<b>COLUMBUS (GA.) ELECTRIC COMPANY</b>					<b>PHILADELPHIA (PA.) RAPID TRANSIT COMPANY</b>					<b>PORTLAND RAILWAY, LIGHT &amp; POWER COMPANY, PORTLAND, ORE.</b>							
1m., Feb., '19	\$86,676	\$47,975	\$38,701	\$34,842	\$3,859	3m., Mar., '19	\$8,217,080	\$5,882,376	\$2,334,704	\$2,418,064	\$58,763	1m., Feb., '19	\$68,911	\$33,998.649	\$288,262	\$184,189	\$104,073
1m., Feb., '18	96,461	\$38,811	\$57,650	\$32,255	25,395	3m., Mar., '18	7,225,940	\$4,723,570	2,502,370	2,401,517	\$262,913	1m., Feb., '18	57,881	\$33,385	\$20,196	\$17,792	\$2,403
12m., Feb., '19	1,184,435	\$593,879	590,556	402,823	182,733	12m., Feb., '19	378,341	\$263,004	115,337	121,261	13,076	12m., Feb., '19	7,890,219	\$5,299,376	2,590,843	2,232,500	358,343
12m., Feb., '18	1,130,911	\$436,953	693,958	366,316	327,642	12m., Feb., '18	716,590	\$488,380	228,210	190,752	37,458	12m., Feb., '18	6,240,740	\$3,745,515	2,495,225	2,145,385	349,840
<b>EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEX.</b>					<b>PORTLAND RAILWAY, LIGHT &amp; POWER COMPANY, PORTLAND, ORE.</b>					<b>PHILADELPHIA (PA.) RAPID TRANSIT COMPANY</b>							
1m., Feb., '19	\$103,194	\$65,412	\$37,781	\$13,973	\$13,973	1m., Feb., '19	\$68,911	\$33,998.649	\$288,262	\$184,189	\$104,073	1m., Feb., '19	\$7,890,219	\$5,299,376	2,590,843	2,232,500	358,343
1m., Feb., '18	80,408	\$44,520	\$35,888	12,851	12,851	1m., Feb., '18	57,881	\$33,385	\$20,196	\$17,792	\$2,403	12m., Feb., '19	6,240,740	\$3,745,515	2,495,225	2,145,385	349,840
12m., Feb., '19	1,181,044	\$701,205	479,839	165,833	\$131,781	12m., Feb., '19	7,890,219	\$5,299,376	2,590,843	2,232,500	358,343	12m., Feb., '18	6,240,740	\$3,745,515	2,495,225	2,145,385	349,840
12m., Feb., '18	950,583	\$529,123	420,660	143,591	\$303,137	12m., Feb., '18	7,225,940	\$4,723,570	2,502,370	2,401,517	\$262,913	12m., Feb., '18	6,240,740	\$3,745,515	2,495,225	2,145,385	349,840
<b>EL PASO (TEX.) ELECTRIC COMPANY</b>					<b>PHILADELPHIA (PA.) RAPID TRANSIT COMPANY</b>					<b>PORTLAND RAILWAY, LIGHT &amp; POWER COMPANY, PORTLAND, ORE.</b>							
1m., Feb., '19	\$120,067	\$85,741	\$34,326	\$6,879	\$27,447	3m., Mar., '19	\$8,217,080	\$5,882,376	\$2,334,704	\$2,418,064	\$58,763	1m., Feb., '19	\$68,911	\$33,998.649	\$288,262	\$184,189	\$104,073
1m., Feb., '18	103,875	\$66,475	\$37,400	6,513	30,887	3m., Mar., '18	7,225,940	\$4,723,570	2,502,370	2,401,517	\$262,913	1m., Feb., '18	57,881	\$33,385	\$20,196	\$17,792	\$2,403
12m., Feb., '19	1,287,428	\$905,222	382,206	\$1,949	\$90,227	12m., Feb., '19	378,341	\$263,004	115,337	121,261	13,076	12m., Feb., '19	7,890,219	\$5,299,376	2,590,843	2,232,500	358,343
12m., Feb., '18	1,274,162	\$813,815	460,347	6,922	390,870	12m., Feb., '18	7,225,940	\$4,723,570	2,502,370	2,401,517	\$262,913	12m., Feb., '18	6,240,740	\$3,745,515	2,495,225	2,145,385	349,840

\* Includes taxes. † Includes non-operating income. ‡ In February, 1919, \$20,607; February, 1918, \$17,322; twelve months ending February, 1919, \$546,010; twelve months, 1918, \$215,600, allowed for depreciation. † In February, 1919, \$20,607; February, 1918, \$17,322; twelve months ending February, 1919, \$546,010; twelve months, 1918, \$215,600, allowed for depreciation.

# Traffic and Transportation

## Seven Cents in Scranton

Company There Has Been Charging Eight Cents—Inventory as Basis for Future Charge

In a decision rendered by the Public Service Commission of Pennsylvania on April 23 the Scranton Railway is directed to establish a 7-cent fare on its lines, with a 61-cent fare when four tickets are purchased.

The 7-cent fare is to continue in force for one year and the 61-cent rate for six months, and then to be modified according to the results in revenue, which actual experience demonstrates. W. D. B. Ainey, chairman of the commission, wrote the opinion. He finds that the Scranton Railway is in all probability greatly over-capitalized.

The company has been charging 8 cents since last September. It established a 6-cent fare in March, 1918. The order of the commission provides:

The Scranton Railway is to file with the Public Service Commission, not later than May 7, 1919, a tariff schedule, effective on one day's prior notice providing for a 7-cent rate of fare to remain in force for the period of one year, and concurrently for a period of six months; a 61-cent rate of fare where coupon tickets in blocks of four are purchased, which tickets shall be put on sale by respondent at its offices and with its conductors, and at the expiration of the six months' period the same to be modified, continued or abandoned by the order of the commission as the intervening experience of the company may warrant; to file with the commission monthly reports of the receipts, expenditures and traffic data.

A valuation of the company's property is to be made. If a valuation conference can be agreed upon between representatives of complainants and the company the commission has announced that it will designate an engineer to sit with them for the purpose of determining the reproduction cost, new and original cost, their report to be submitted to the commission for further consideration.

The commission found that the annual operating expenses were approximately \$1,452,932, excluding any items for deferred maintenance; that the number of passengers carried per annum based on the present patronage would be about 23,000,000 and that neither a 5 nor a 6-cent rate of fare would produce sufficient revenue to pay these operating expenses and yield any return to the stockholders. The commission held that the company appeared to be greatly over-capitalized, there being outstanding \$2,000,000 of stock and \$7,395,500 of bonds, and declined to accept this as a basis for fair return.

Commissioner Ainey said in his opinion accompanying the order:

It is not disputed that the company is entitled to earn a fair return on its property devoted to public use. The complainants suggest that if the rate of return be computed upon an estimated value of \$4,000,000 at 6 per cent it would allow \$240,000 for that purpose. Were we to adopt this basis, although as pointed out the complainants do not attempt to establish it as being the correct amount, it would yield at 7 per cent \$280,000, or total required revenue of \$1,720,000. The 1917 earnings at \$1,529,856 left a deficit of \$203,095. Manifestly a larger revenue is required. Under all the evidence an annual passenger revenue is not too much to maintain service and solvency.

## Los Angeles Wants Help Commission Has Increased Fare Applications Before It From Both Companies There

The applications of the Pacific Electric Railway to increase fares at Los Angeles, Cal., to increase local fares in certain communities outside of Los Angeles, and to increase the minimum fare between interurban points, was scheduled to be heard by the California Railroad Commission, at Los Angeles, on April 29.

### WANTS EIGHT-CENT FARE

In lieu of the present 5-cent fare in Los Angeles, the company wants to establish a downtown zone, the extremities of which shall not be more than 1½ miles from the Pacific Electric's Main or Hill Street Stations, with a cash 5-cent fare and a blanket 8-cent cash fare to, from and within the balance of the present 5-cent zone. The company also requests authority to issue a coupon book of twenty tickets to be sold for \$1, the book to be transferable, limited to ten days from date of sale and to provide two trips daily during such period.

Glendale, Long Beach, Pasadena, Pomona, Redlands, Redondo Beach, Riverside, San Bernardino, San Pedro-Wilmington, Santa Ana, South Pasadena and Santa Monica-Ocean Park-Venice-Playa del Rey are the outside communities that have street-car zones. At these points the company proposes to substitute for the present 5-cent fare a cash 7-cent fare and to place on sale a twenty-coupon book for \$1, subject to the same provisions as at Los Angeles.

The railway has also asked permission to advance the present minimum for interurban fares from 5 cents to 7 cents a single trip, and from 10 cents to 14 cents for round trips. This change, if brought about, will have the effect of correspondingly increasing the local fares within certain cities and communities where these minimum fares now prevail.

It is also proposed to increase forty-five school tickets from \$1 to 1.40.

### INTERURBAN AND CITY APPLICATIONS DISTINCT

The present applications are the outgrowth of a recent petition on the part of the Pacific Electric to make general increases in its interurban and local fares. In a decision rendered on Sept. 4, 1918, the Railroad Commission granted authority to make certain changes in the interurban fares, but no action was taken on the situation at Los Angeles or the outside communities, owing to the fact that the attorneys for the city of Los Angeles and

the other communities objected to any change in fares until the entire situation could be studied and corrected on a uniform and non-discriminatory basis.

In support of its applications, the company has filed with the commission a statement of operations for the calendar year 1918, showing a net loss to the company of \$1,695,143. It is declared that revenues realized by the advances in fares recently granted, together with increased revenue for freight service authorized by the California Commission and the Interstate Commerce Commission, are insufficient to meet the company's fixed charges and operating expenses and the statement is made that the increases proposed from fares will be applied to meeting annual fixed charges and operating expenses, which have greatly advanced, due to increased costs of operating materials and by reason of advances in wages to employees.

The Los Angeles Railway Corporation now has before the commission an application to increase fares over its lines. The combined applications, therefore, place the entire situation of fares within the city of Los Angeles before the commission for adjudication.

## Public Service Explains Zoning Plan

Beginning on April 25, at the conclusion of the 7-cent fare hearings, the Public Utilities Commission of New Jersey continued the hearings on the proposed zone system of the Public Service Railway. To expedite the matter, counsel for the commission, the railway and the municipalities agreed that the entire report, which was abstracted at length in earlier issues of this paper, should be admitted as a single exhibit, only fragmentary details being explained by witnesses.

Portions of the report were explained by Thomas N. McCarter, president of Public Service, and Dr. Thomas Conway, Jr., who had been retained by the zoning committee as expert adviser. M. R. Boylan, general auditor of the company, told how the results of the traffic check had been compiled and described the accounting system evolved to care for the preliminary and final classifications.

On April 30, Dean Mortimer E. Cooley, was recalled to the stand for cross-examination. He explained the basis of the appraisal of the property made by him in 1915. He said that in fixing unit costs he had, as was customary with him, averaged costs of material and labor over a five-year period. The figures were taken from the company's books and from vouchers showing actual expenditures.



## Chicago Surface Fares Five Cents

### Seven-Cent Rate Refused by Illinois Commission, Which Anticipates Deficit of Few Hundred Thousand Dollars at Five Cents

Surface car fares in Chicago are likely to remain at 5 cents. This was indicated by a decision of the Public Utilities Commission of Illinois on April 25 denying the application of the Chicago Surface Lines for a 7-cent fare. The decision held that an increase of even 1 cent would compel the public to pay from \$3,500,000 to \$4,000,000 more a year for transportation, whereas the commission anticipates a possible deficit of only a few hundred thousand dollars. This amount, it holds, can be met by a cut in the city's profits and a readjustment of allowances for renewals and depreciation.

#### ONE COMMISSIONER DISSENTED

The commission retains jurisdiction of the case so that it may be reopened at a future date if emergency action be found necessary. Four members of the commission joined in this opinion. Commissioner Lucey dissented. He urged a temporary 6-cent fare to permit needed improvements of the service in the face of existing financial difficulties and suggested that a valuation of the entire system be made in the meantime.

The commission based its decision on the theory that the war-time emergency no longer exists and that any increase in rates must arise from the right to relief under the established rules of law. It held, in brief, that the valuation of \$156,481,860 cited by the company represents only the amount which the city would have to pay if it took over the properties as of Aug. 1, 1918, under the terms of the 1907 ordinances.

The 5-cent fare was specified in the 1907 ordinance with this valuation in view, and "if the condition as to fares is disregarded, the provisions as to valuations are not controlling, and the value of these properties, for rate-making purposes, must be determined precisely as if there were no provisions in the ordinances as to the prices at which the city or its licensee may require the properties. The companies will not be permitted to repudiate the condition as to fares and at the same time to insist on this valuation."

#### MAY OVERRULE 1907 ORDINANCE FARE

While the commission upheld the city's plea for a 5-cent fare, the city's contention that the rate of fare provided in the 1907 ordinances could not be disturbed was specifically overruled. On this point the commission said:

It is well settled that a municipality cannot, by a contract in franchise ordinances respecting rates of fare, foreclose the exercise of the police power of the State, unless clearly authorized to do so by the supreme legislative power. \* \* \* There is nothing in the statutes conferring authority upon municipalities of this State, with reference to street railroads, which amounts to a renunciation of the sovereign power of the State, by terms so clear and unequivocal as to remove doubt as to their proper construction.

It is stated that the recent ruling of the United States Supreme Court in the Columbus, Ohio, case has no bearing on similar disputes under the Illinois laws.

#### PRESENT OUTLOOK NOT SO BAD

Taking up the question of valuation for rate-making purposes, the commission then eliminates from the purchase price figures, certain items amounting to \$44,100,762, which it says "do not represent property useful and actually used in the public service." These deductions include \$9,016,971 of old franchise values; \$8,000,000 for paving allowances under the settlement ordinances; \$14,794,666 for tangible property replaced during the period of rehabilitation and reconstruction; \$8,192,750 allowed under the ordinances for superintendence of construction, and \$4,096,375 which has accumulated from allowances specified in the ordinances for bond discount or brokerage. No deduction was made for depreciation, and no allowances were made for goodwill or going value.

In discussing the question of earnings and expenses, the commission pointed out that conditions had changed since the company's petition was filed last November and that the outlook is not nearly so bad at the present time. The companies, for instance, had estimated that their gross earnings for the year ending July 31, 1919, would not exceed \$34,000,000. At that time it could not be foreseen that business would pick up as it has in the past few months. The commission believes that "notwithstanding the abnormal conditions of the months of the autumn of 1918," the gross earnings will be about \$35,350,000. It says on this point:

The small receipts for certain months in 1918 did not result from any mismanagement of the properties of these companies; on the contrary, the affairs of the companies appear to have been in this case to have been prudently and efficiently managed.

The commission also expresses the opinion that estimates of cost of materials "will not have that degree of permanency which entitle them to be considered as fixed elements in adjusting rates." While cognizance is taken of this outlook, as well as the present high cost of labor under the War Labor Board award, the commission estimates that the companies should be able to operate on a ratio of 76.2 per cent. This would leave net earnings of about \$8,500,000. The commission says:

In determining what is a fair rate of return upon these properties, consideration must be given to the fact that the investment is safeguarded by the provisions of the Muller law and of the settlement ordinances, which make it necessary for any other company obtaining franchises from the city at the expiration of franchises of the petitioners to take over the properties at the valuation fixed in case the city purchases them.

Taking the estimate of \$8,600,000 of net earnings for the current year, the

commission says this represents a return of 7 per cent upon \$123,000,000 and of 5½ per cent upon the \$156,000,000 capital account of the companies, and that it will be sufficient, after making allowances for the division with the city of the excess over the 5 per cent allowed to the companies on the capital account, to meet the interest on their bonded debt. Finally upon the question of ultimate relief in the event that this should be required, the commission says:

This increased burden should not be placed on the public when there are other and obvious measures of relief against either reduction of wages or a receivership. The settlement ordinances provide for a commutation of the city's share of profits into reduction of fares. Of course, we must assume that the city will exercise control over the profits in a way as to prevent, on the one hand, injury to the properties in which it has an interest, and, on the other, to avoid a necessity for increasing the burden on the public. And there is a distinction between profits and money actually required to give a fair return on property used in the public service. The commission would not be justified in imposing a burden of \$3,000,000 or \$4,000,000 upon the people of Chicago, in order to make up a deficit of a few hundred thousand dollars for which provision can be made through a commutation of the city's profits and a readjustment of allowances for renewals and depreciation.

#### AN EMERGENCY DOES EXIST, SAYS DISSENER

In his dissenting opinion, Commissioner Lucey insisted that present conditions constitute an emergency for the companies and that the efficient and continuous operation of the surface railway system is of vital necessity to the business life of Chicago. In this connection he said:

Unless state regulatory bodies take a liberal view of the necessities of utility corporations serving the public, and permit them to earn sufficient money to pay a fair rate of return and keep their plants in an efficient and first-class condition, state regulation, which is now on trial in many states, may not prove as successful as municipal disorder has proved in the past. The city of Chicago as a governmental agency should be more interested in preserving present conditions than in confronting a chaotic condition of affairs, wherever the responsibility for the same may be ultimately placed.

The petition of the Chicago Surface Lines for a 7-cent fare was filed with the commission on Nov. 21, 1918. Hearings were held up to Feb. 14 when the case was taken under advisement. There have been rumors that the company would go back to its old wage scale for trainmen under a contract which still has more than a year to run.

The War Labor Board scale of 43 cents to 48 cents is now being paid, but the company has the right to abandon this with the coming of peace. The trainmen's organization has taken the position that the company is entitled to a reasonable return which will enable it to continue the wage scale that is now in force.

The Chicago Elevated Railways have been collecting a 6-cent fare since Nov. 19, 1918, under authority of the State commission. The city is inclined to ask that the 5-cent fare be restored on these lines, but the present rate is likely to continue on the Elevated at least until Dec. 1.

## Syracuse Results Poor

Company Has Been Charging Six Cents, but Now Wants Additional Cent for Transfer

The New York State Railways has asked the Public Service Commission for the Second District, as a means of increasing its revenues to the extent that it will be able to carry on a track and pavement reconstruction program in Syracuse this year:

That for a period of one year the company be permitted to collect 1 cent for each transfer issued.

That the proceeds from the sale of transfers be placed in a special fund in the bank, and

That the proceeds from the sale of transfers be spent entirely for reconstruction of tracks and pavements in the city.

The railway's application was filed by B. E. Tilton as vice-president. A hearing will follow.

### WANTS TRANSFER CHARGE

The company alleges that its rates are insufficient to yield a reasonable compensation for the services rendered and are unjustly and unreasonably low and do not allow a reasonable average return upon the value of the property used in the public service and do not provide sufficient income for surplus and contingencies. It asks the commission to determine that a 6-cent fare with 1 cent for a transfer is a just and reasonable rate in Syracuse.

The increase asked, according to the petition is required to carry on necessary and important work and improvements. The company says on April 3 the city notified it of contemplated paving and resurfacing on certain streets this year in which the company's tracks are located, at an estimated cost of \$356,600 for resurfacing and \$109,000 for new paving between tracks.

### COMPANY'S CREDIT IMPAIRED

The company, it is stated, is not able to raise money to carry on the construction work other than through its receipts, and these, with present operating expenses, it is claimed, are not sufficient to pay the fixed charges. Under these conditions, the company says it is not possible for it to undertake the reconstruction work at this time.

The company says the result of 6-cent fare operations in Syracuse since Dec. 2 shows this increase in revenue:

December	.....\$22,467.	.....33.22 per cent
January	.....32,764.	.....20.29 per cent
February	.....31,813.	.....21.65 per cent
March	.....34,072.	.....21.10 per cent

It is further set forth that these increases have not, in spite of rigid economies, met the increase in operating expenses, due to higher costs of materials and higher rates of wages granted under the decision of the War Labor Board, that the results of operations for December, January and February under a 6-cent fare have not enabled the company to earn its fixed charges and this in spite of mild winter when operating expenses were com-

paratively low. Losses for December, January and February are given as follows:

December	.....\$15,111
January	.....5,744
February	.....12,537

The railway company says the streets upon which improvements are contemplated are in need of resurfacing, and if it is permitted to charge 1 cent for a transfer the work can be carried on and the improvements made. With present revenues the company says it cannot undertake any reconstruction work this year.

## Public Service Seven-Cent Fare Case Closed

After extended hearings on the application of the Public Service Railway, Newark, N. J., for permission to increase its rate of fare to 7 cents, plus 1 cent for a transfer, the oral testimony was brought to a close on April 25 and the railway and F. H. Sommer, for a number of municipalities, filed briefs summarizing the case on April 29. In the briefs the railway holds that the rate asked for is necessary if safe, adequate and proper service is to be given, while the municipalities endeavor to show that advanced rates sought exceed the value of the service to the short-haul rider.

The company showed the payment of moderate dividends during 1917 was justified in the maintaining of its credit. In the following year operating costs mounted to unheard of figures, necessitating immediate relief. It was not until July 10, however, that permission to charge 1 cent for a transfer was granted. It was held at that time that this additional revenue would permit the company during 1918 to earn its fixed charges and its operating expenses, including \$800,000 for depreciation, no return being allowed on stockholders' investments, because the commission thought that the company could temporarily get along without any new capital. Immediately thereafter a ruling of the National War Labor Board caused a further great increase in operating expense and permission was obtained to increase the fare to 7 cents, with 1 cent for a transfer, from Oct. 15 to April 1, 1919, on which date the fare was to be reduced to 6 cents.

In 1918 the railway company spent in operating expenses and fixed charges every cent collected from fares. Allowing for rational and proper expenditure for operation and maintenance, including depreciation but nothing for dividends, the estimates show that even with the 7-cent fare there will be a deficit. The company petitioned that the new rate be made effective from May 1.

In his brief Mr. Sommer called attention to the fact that if the pending application is granted the company will have been allowed to charge five different rates of fare within a period of eleven months.

## Seven Cents in Worcester

Conditions that Led Massachusetts Commission to Sanction that Rate in Its Recent Decision

A 7-cent fare unit was established on the Worcester (Mass.) Consolidated Street Railway on April 14 by a decision of the Public Service Commission. The board required the company, however, to place tickets on sale at the rate of ten for 65 cents, good in all fare zones and sold by conductors. An increase of 33 1/3 per cent in existing workman's tickets was also established by the decision. The company desired to put a flat 7-cent fare unit into effect on its system and to increase workmen's ticket rates 40 per cent. The commission believes from experience on other properties that about 60 per cent of the traffic will be handled on the reduced-rate ticket basis.

### SIX CENTS NOT ENOUGH

The Worcester company operates 290 miles of single track, about 80 miles of which are located in the city of Worcester. These city lines contribute about 71 per cent of the total passenger traffic. Thirty cities and towns are served, with a population of 358,005 in 1915. Until July 1, 1918, the company had a 5-cent fare, with the railway divided into zones of varying lengths. On that date a revised tariff went into effect, without opposition, substituting a 6-cent fare upon all zones outside Worcester, and on Aug. 1, 1918, a tariff became affective, also without opposition, changing the fare in Worcester to 6 cents.

In January, 1919, the company filed a tariff with the commission making the charge in each zone uniformly 7 cents, proportionally increasing the rates for pupils' tickets, and fixing a 40 per cent increase on workmen's tickets, these last not having been increased before.

It appeared at the public hearings on the present application that the increases in payrolls made by the company since 1914 represented an additional cost for every passenger carried of about 1.07 cents. The company has paid dividends every year since 1887 until 1918, when no dividends were paid. The average earnings on the total stock investment was 4.57 per cent. The commission found that the company has been conservative in its accounting and that until recently the property has been well maintained. The company estimated that since 1914 the following increased costs per passenger among others have resulted: payroll, 1.07 cents; materials and supplies, 0.239 cents; power, 0.323 cents.

### INCREASE IN REVENUE VERY SMALL

The increase in revenue under a 6-cent fare from Aug. 1, 1918, to the end of that year, excluding October on account of the influenza epidemic, was 7.6 per cent as compared with the same months of 1917 when the 5-cent fare

was in effect. Upon all the evidence the commission is of the opinion that the company is entitled to an increase above existing rates which will yield at least \$400,000. The board believes that general economic conditions associated with the war resulted in a steady decline of traffic wholly apart from the effect of rate increases. The estimated requirements of the company for 1919 are: Operating expenses, \$3,033,900; additional depreciation charge, \$171,964; interest on funded and unfunded debt, \$268,026; taxes and other charges, \$182,121; return on stock investment (6 per cent) \$429,197; total \$4,085,209.

### Providence Men Insistent

The union of employees of the Rhode Island Company, Providence, R. I., at a meeting held on April 28 voted to strike unless the back wages due them, amounting to \$144,000, are paid by May 3.

Presiding Justice Tanner in the Rhode Island Superior Court last week issued an order directing the receivers of the Rhode Island Company to make the payment, the employees having threatened to strike unless such a decree was entered.

The reason for the latest action of the carmen was explained by Business Agent Coleman. He stated that under the law other creditors in the same class with the employees have thirty days in which to file an appeal from the decision of the court, but as the carmen have waited for several months for the payment of the back wages, they do not propose to permit the payment to be delayed further. It is their belief that if there is to be an appeal from the court's decision by any of the creditors, such an appeal could be filed immediately and a hearing given by the court, thus expediting the matter and removing any obstacles to the receivers carrying out the court's decree and making the payment.

If the payment is not made by May 3, it is the intention of the union men to give the public twenty-four hours' notice of their purpose to strike. If the union adheres to this program the strike will become effective on May 4.

### Court Allows Six-Cent Fare

Kansas City, Kan., and Rosedale citizens are paying 6 cents on the cars of the Kansas City (Mo.) Railways operated in Kansas. A temporary restraining order against the Public Utilities Commission, the Attorney General of Kansas and the cities of Kansas City, Kan., and Rosedale, enjoining them from interfering with it in charging and collecting a 6-cent fare in the two cities was granted the railway on April 15 by Judge John C. Pollock in the federal court at Topeka. Under the court decree the company is required to issue to each passenger paying a 6-cent fare a receipt, reciting that the fare is conditional on the final outcome of the litigation. The application of the railway for an interlocutory injunction was set for a hearing on April 24.

The restraining order, removes the entire 6-cent fare litigation, pending since last May, to the Federal Court. The city officials have maintained that they were the proper authorities to pass on any increase applications, basing their claims on the fact that the city was a party to a contract with the company. The State Supreme Court ruled that the Public Utilities Commission had jurisdiction in fare increase matters. Under this decision the commission recently denied an appeal for an increase.

The order fixing the fare at 6 cents was issued by Judge Pollock on the application of the railway which stated that by reason of the refusal of the Public Utilities Commission to allow it to charge 6-cent fares the company was suffering great financial loss.

## Transportation News Notes

**Fare Hearing Postponed.**—The State Public Service Commission of Washington has set May 14 as the date of hearing on the increase of fare on the Seattle & Rainier Valley Railway, postponing the date from April 23. The railway has filed a schedule increasing fare in the city limits to 7 cents, with 1 cent extra for each transfer.

**Restraining Order in Fare Case.**—Circuit Judge S. G. Houghton, recently issued a preliminary mandatory injunction restraining the Saginaw-Bay City Railway from putting in effect its proposed 6-cent fare in Bay City and compelling the continuance of the operation of its cars. The company notified the Council some time ago to the effect that it would increase its rate of fare to 6 cents commencing on April 18.

**Must Abide by State Rate.**—Judge C. W. Sessions has filed in the eastern district of Michigan a decision dismissing the action of the Michigan Railway, Jackson, Mich., seeking to absolve it from the provision in its charter requiring it to observe the 2-cent fare law. The court holds that the Michigan Railway never was under federal control and that it is bound by the provisions of its charter, in which the 2-cent fare law is incorporated.

**Traffic Check in Kansas City.**—The Kansas City Railways has adopted the "origin and destination basis" checking system in use in Chicago, Philadelphia, and the State of New Jersey. Seventy checkers have been engaged to work upon suburban cars before the canvass is extended to the business district. The work will be under Major H. F. Mayer, recently released from military service. When a passenger boards a car he will receive a card upon which to write his destination. Cards will be collected as passengers leave the car. The count will be repeated several

times on each line so that an accurate approximation of the travel on the different lines may be made.

**Seven-Cent Zones Denied.**—The application of the Bridgeton & Millville Traction Company, Bridgeton, N. J., for authority to increase its passenger rates in each fare zone from 5 cents to 7 cents has been denied by the Board of Public Utility Commissioners, but an order has been issued allowing the company to file an amended tariff providing for a 6-cent instead of a 5-cent fare in each zone. The fare zones are each 2 miles long and under the 5-cent fare the company charged 2½ cents a mile. This is said to be the highest electric railway rate per mile in New Jersey. Under the 6-cent fare, the rate per mile is increased to 3 cents. Increases in freight rates are also allowed the company. The commission was prompted to allow the 6-cent fare because the evidence in the cause clearly shows that the company is not earning sufficient revenue.

**New Transfers in Kansas City.**—The Kansas City (Mo.) Railways will change on May 4 from the transfers now in use, which have not proved satisfactory, to the one in use generally some years ago. When a transfer is given it will be punched to the first change of cars, and, if the holder wishes another it will be given him in exchange for the first one issued. The transfers will contain a list of intersections and the passenger will be obliged to state at which street he wishes to change to another line. This street will be punched and the transfer will be good at no other street. It will be good for any line at that intersection, but not for a return trip. Upon the second transfer, the number from which the original was issued will also be punched, so that a record can, in this manner, be kept of all traffic and transfers. The directions will be noted by clerks. The new transfer will be an inch longer than the one now in use.

**Seven-Cent Fare Asked in Memphis.**—Declaring that present revenues from the 5-cent fare are inadequate to meet increased cost of production the Memphis (Tenn.) Street Railway, through Receivers Frank Elgin and T. H. Tutwiler, has petitioned Federal Judge John E. McCall for permission to apply to the new State Railroad and Public Utilities Commission for a 7-cent cash fare and 1 cent for each transfer. Judge McCall has since authorized the company to proceed and the petition will be presented in a few days. The deficit of the company in 1918 was \$225,000. A special plea will be made for the Raleigh line to be allowed to charge an additional cash fare beyond the town of Binghampton. Heretofore the fare from Memphis to Binghampton has been 5 cents with an additional nickel from the Macon Road to Raleigh. By act of the Legislature which adjourned recently the town of Binghampton, except for its manufacturing suburbs, will become a part of the city proper soon.

## Personal Mention

### George P. Toby to London

He Is Appointed Executive Secretary of the American Chamber of Commerce in that City

George P. Toby, long connected with banking and industrial corporations in this country, has been appointed executive secretary of the American Chamber of Commerce in London and will sail for his new post about May 12, meanwhile conferring with American merchants as to the service which the American Chamber in London can render them. Mr. Toby has been long known as an investment banker, and in this capacity has made a careful study of the operation of American industrial and public utility corporations.

#### MR. TOBY WELL QUALIFIED

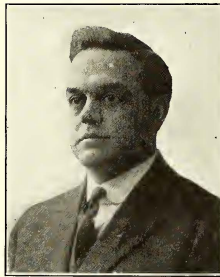
Mr. Toby spent more than a year in Washington during the war on work for the Treasury Department and on plans for co-operation between the various government departments and the business world. His banking interests brought him to a close study and investigation of the commercial possibilities of industrial corporations, including studies of the markets for products, methods of distribution, etc. These activities also have taken him to every part of the country, giving him therefore a broad sympathy with every section of the United States. He also has the advantage of having traveled extensively in Europe and Canada.

G. M. Cassatt, president of the American Chamber of Commerce in London, who is now in the United States, in announcing the appointment explained that the London organization has as its members the representatives in England of American manufacturing and exporting interests, and also of the foremost British manufacturers and exporters, too, and importers from the United States. The former are active members, the latter associate.

#### PREPARED FOR INQUIRIES

The Chamber has standing committees on finance, commerce and trade, transportation, trade information, etc., and the membership is also divided by businesses into trade groups, each working through its own committee. Thus almost any inquiry can be expeditiously handled by referring it to the proper committee or proper trade group. The London Chamber desires that the individual American manufacturer, merchant, exporter from one end of the country to the other should learn to look upon the chamber as an overseas service bureau of his own—ready to promote American business.

H. O. Allison, Beaver, Pa., has been appointed safety engineer of the Beaver Valley Traction Company, New Brighton, Pa. He assumed his new duties on April 1. Mr. Allison at the time of his selection was special inspector and assistant to the chief of the inspection bureau of the Associated Bureaus, Pittsburgh Railways, with headquarters at Pittsburgh, under the direction of Cecil G. Rice. A service bureau has been established by the Beaver Valley Traction Company to handle all complaints, service suggestions and accident prevention measures. Mr. Allison was associated with *The Daily Times* of Beaver, Pa., for six years prior to 1917 as general manager and secretary-treasurer. Twelve years ago he went to Beaver County from Ohio and a few



H. O. ALLISON

months afterward became associated with *The Times* as advertising manager. Shortly afterward he assumed complete charge of the paper. It was while in charge there that he first brought his views of transportation facilities to the attention of W. H. Boyce, superintendent of the Beaver Valley Traction Company. After several consultations with him an extensive publicity campaign for the prevention of accidents and a better public understanding was begun. The success which attended what was then a new feature to electric railways was such that publicity has become a regular feature in connection with the Beaver Valley Traction Company. The service bureau of which Mr. Allison will now become the active head will not be an experiment, as many of its details have been in effect for some time, but in the present appointment it is the desire of Mr. Boyce to make it more complete under a supervision that will result in even a better service and less chance for accidents. The employment of new men will be a feature of the bureau.

Charles L. Tutt, secretary and treasurer of the Grand River Valley Railway, Colorado Springs, Col., when he went into service last September, resigned as secretary and treasurer of the railway, but the resignation was not accepted, and J. A. Hull was elected as assistant secretary and treasurer. Mr. Tutt has returned from military duty and has resumed the duties of secretary and treasurer. Mr. Hull has resigned.

W. A. Carson, who is vice-president and general manager of the Evansville & Ohio Valley Railway, Evansville, Ind., was elected as one of the two vice-presidents of the Y. M. C. A. State Association at the recent convention. Mr. Carson was chosen for this position because of his good record in the Y. M. C. A. work in Evansville, and because it is customary for the railroad world to be represented on the board of the Y. M. C. A.

M. J. B. McConnell, for the last year division superintendent of the Steubenville, East Liverpool & Beaver Valley Traction Company, Steubenville, Ohio, has been made general superintendent with headquarters at East Liverpool, Ohio. Before going to Steubenville Mr. McConnell was connected with the New York State Railways, Rochester Lines, as chief clerk to the general manager and later as assistant engineer of maintenance of way.

D. H. Braymer, formerly editor of the *Electrical Record*, has been appointed managing editor of the *Electrical World*. Mr. Braymer, prior to becoming editor of the *Electrical Record* in 1917, was for two years engineering editor of the *Electrical World*. Before that he was editor of *Electrical Engineering* of Atlanta, Ga., and of its successor, the *Southern Electrician*. Mr. Braymer was graduated from Cornell University in 1906, with the degrees of A.B. and E.E.

Lieut.-Col. W. R. Thompson, manager of construction and engineering of H. M. Byllesby & Company, Chicago, Ill., landed in New York from overseas recently. Colonel Thompson has been in uniform since completion of the second officers training camp at Fort Sheridan, from which he was sent as an instructor to Deming, N. M., commissioned as captain. Later he was made a major and sent to France with the 109th Engineers. About the time the armistice was signed he was promoted to the rank of Lieutenant-Colonel in the same regiment.

William A. Sullivan has announced his resignation as manager for the Shreveport (La.) Railways and his acceptance of the general management of the Gulfport & Mississippi Coast Traction Company, which controls city, interurban and electric lighting companies in and between Pass Christian and Biloxi, Miss. Mr. Sullivan has been manager of the Shreveport Railways for the last nine years. He was formerly with Ford, Bacon & Davis, at Birmingham and Little Rock. Under his direction the Shreveport Railways

increased from 13 miles of track to 33 miles. Mr. Sullivan was also secretary-treasurer of the Shreveport Baseball Club and was active in Texas League affairs.

J. C. Rockwell has been promoted from local general manager to vice-president of the Manila Electric Railroad & Light Company, Manila, P. I., in charge of the general Philippine affairs of that company. Mr. Rockwell was graduated in 1904 from Cornell University with the degree of mechanical engineer. Following his graduation he engaged in track construction work. In 1906 he became superintendent of transportation of the Syracuse, Lake Shore & Northern Railroad, Syracuse, N. Y. He was appointed general superintendent in 1909 of the Charleston (W. Va.) Interurban Railroad, and the following year was elected general manager of that company. In 1911 he joined the operating organization of The J. G. White Management Corporation, New York, N. Y., and was assigned to the Manila Electric Railroad

Dr. William McClellan has resigned as dean of the Wharton School of Finance and Commerce of the University of Pennsylvania. He has announced that he has no other plans than to resume his relations with the firm of McClellan & Campion, with offices in New York and Philadelphia. Dr. McClellan was born in Philadelphia and was graduated from the Arts Department of the University of Pennsylvania. In 1903 he obtained the degree of Doctor of Philosophy and in 1914 the university presented to him the degree of Electrical Engineer. He was engineer in charge of construction of the Philadelphia Rapid Transit Company, supervising engineer with Westinghouse Church, Kerr & Company and in 1907 associated himself with H. T. Campion, Philadelphia, in the engineering business. He also served for a time as electrical engineer and chief of the division of light, heat and power of the Public Service Commission for the Second District of New York.

S. R. Dunbar, purchasing agent of the Union Traction Company of Indiana, Anderson, Ind., has resigned effective on May 15. Mr. Dunbar became associated with the Union Traction Company sixteen years ago as stockkeeper. After being employed in this position for six months, he was promoted to the position of purchasing agent for the company. He held this position for two years and was then made general passenger agent, from which position he resigned after one year and went to Boston to engage in business. Mr. Dunbar returned to Anderson in 1907 as head of the purchasing department of the traction line and has retained this position since that time. He has also for the last year and one-half been editor of *Safety* a magazine published by the railway in the interest of the employees. Mr. Dunbar desired to change the exacting nature of his duties, but has made no decision as to what he will do in the future.

Capt. Howard H. George, formerly of the Fifty-fifth Engineers, A. E. F., has recently returned from France and has resumed his former position as assistant engineer with the Public Service Railway, Newark, N. J., having received his discharge from the service. Captain George is a member of the American Society of Civil Engineers and was commissioned in the Engineer Officers' Reserve Corps on Jan. 16, 1917. He was among the first civilian engineers to be commissioned in the army, and was ordered to active duty in May, 1917, subsequently serving eight months with the 305th Engineers, 80th Division. Later he was transferred to the Fifty-fifth Engineers, with which unit he went to France. The battalion of this regiment to which Captain George belonged was first engaged in the construction of a large ammunition dump, and later, along with several other units, on the large storage depot at Montierchaume. This project involved the construction of more than

400 miles of trackage, comprising receiving and departure yards, inbound and outbound classification yards, storage grids, many large steel and frame storage warehouses, barracks and officers' quarters for several thousand troops, an engine repair shop and other work of a miscellaneous character. Captain George was engineer officer in charge of all building construction on this project. He was finally transferred for duty with the Base Section Engineer at Le Havre, where he was stationed when the signing of the armistice stopped practically all construction work in the Service of Supplies and he received his orders to return home.

R. W. Spofford has been appointed local general manager of the Manila Electric Railroad & Light Company, Manila, P. I. Mr. Spofford was graduated from the United States Naval Academy at Annapolis, and spent about five years in the navy. He was retired in 1911. Shortly thereafter he was engaged by The J. G. White Management Corpora-



J. C. ROCKWELL

& Light Company as manager of the light and power department. He was made general manager of that company in the early part of 1918.

John B. Crawford has been appointed general superintendent of the Concord & Manchester electric branch of the Boston & Maine Railroad, Concord, N. H. Mr. Crawford was formerly connected with the Middle West Utilities Company, Chicago, in the capacity of district superintendent of its various subsidiary companies. He is very well known in the East, having entered electric railway work in 1895 on the Hartford (Conn.) Street Railway. His experience since then has included some light, power and transmission work, but has been mostly in the railway field. Among the systems with which Mr. Crawford has served in various capacities are the Lexington & Interurban Railway, Lexington, Ky.; Fort Wayne & Wabash Valley Traction Company, Fort Wayne, Ind.; Winona Interurban Railway, Warsaw, Ind. and the Groton & Stonington Street Railway, New London, Conn.



R. W. SPOFFORD

tion and was assigned to the staff of the Augusta-Aiken Railway & Electric Corporation, Augusta, Ga. Later he was made general manager of that company. When the United States entered the World War, Mr. Spofford, as a Naval Reserve officer, was called to the colors for service. With the signing of the armistice he was again placed on the retired list of the Navy, with the grade of Lieutenant-commander.

Patrick F. Sheehan, for the last seventeen years president of the Brockton branch of the Amalgamated Association of Street & Electric Railway Employees of America, has been made assistant division superintendent of the Bay State Street Railway, Boston, Mass., with headquarters in Brockton, Mass. He succeeds John T. Conway, Quincy, who has been made manager of the Hyde Park division, succeeding Thomas Gammons, resigned. Mr. Sheehan automatically severed his official connection with the union upon entering on his railway duties. He has been a leader in the State branch of the American Federation of Labor.

# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

## Slack Adjusters Finding Fair Market

System of Trial Equipments Bringing Considerable Resales—No Price Changes Reported

Sales of slack adjusters, manufacturers report, are running in the neighborhood of 30 to 40 per cent of normal. Among the traction companies which are equipping their rolling stock with these accessories, is one prominent road in the East which, whenever a truck goes into the shop for overhauling, equips it with slack adjusters, provided it was not so equipped previously. This method spreads the cost over a considerable period of time and does not take the truck out of service to make the installation. Of course any repair work and replacements of adjusters which may be necessary are cared for as they appear.

Where adjusters are not employed the turnbuckle used to overcome wear on the brakes must be examined and set by hand periodically, sometimes as often as once a day, depending on the braking characteristics of the run. The

## Little Movement of Scrap Iron and Steel

Settlement of Steel Controversy Will Probably Increase Activity—More Scrap Used Than Formerly

Present conditions in the scrap iron and steel market are extremely quiet. This market reflects the new steel and iron market to a great degree, and when a solution to the present steel controversy is found it is expected that the activity of the steel interests which it is reasonable to assume will follow, will cause a corresponding activity in the scrap market.

After the price suggestions of five weeks ago the scrap market picked up in good shape. The demand became better and prices showed an advance of \$1 to \$1.50 a ton on nearly all grades. Then the prices and the demand fell off and both buyers and sellers assumed a waiting attitude.

Scrap is rather a local proposition and seldom moves any great distance. The Pittsburgh district is a heavy consumer of scrap iron and steel and cannot always provide sufficient for its

## Improvement in Southern Market Coming

While Buying Has Been Light for Some Time the Future Appears to Be Decidedly Hopeful

A number of Southern street railroads are passing through the crucible of financial difficulty, chargeable to a protracted period of high material and equipment prices combined with mounting labor costs on the one hand and fixed fares on the other. A few roads that have not been permitted to increase fares have so far weathered these conditions. Others that have secured relief are carrying heavy financial burdens, and with a gradual decline in price levels it is possible that they will be able to pass over the present crisis successfully. Although the Southern street railways do not occupy a unique position in regard to the present-day utility problems, a survey of the field indicates that the financial aspect reflects immediate purchasing power and what may be expected from this quarter in the way of extensions and replacements for the near future. Operators are cognizant of the present needs of their properties, and it is not a question of what to buy but of how long purchases can be postponed until the occasion is more propitious.

## ROTARIES AND TURBINES NEEDED

Practically no generating equipment has been purchased since the establishment of cantonments made it absolutely necessary in some instances; and while the need is great and a potential market exists for rotaries and turbines, the manufacturers can not hope to close any large transactions for some time to come.

Car equipment over the entire section is badly in need of replenishment, but nothing is being bought outside of a few second-hand outfits. The demand for new motors has almost disappeared and second-hand motors go begging. No price change has been recorded in grid resistances and the volume of sales appears to be picking up. Rails and spikes are dull. Deliveries are now much easier.

If too much attention is paid to the volume of street railway supply business transacted during the past two years, a feeling of pessimism is bound to prevail; but if, on the other hand, a close study is made of the present and underlying conditions of the street railway field, a brighter outlook will be the result. There is no doubt that in summing up the prospects, a gradual improvement in this region is perceptible.

THE FOLLOWING TABLE GIVES AVERAGE PRICES FOR SOME RAILWAY SCRAPS IN DIFFERENT SECTIONS OF THE COUNTRY

	New York	Philadelphia	Chicago	Cincinnati
Heavy melting steel scrap, G. T.	\$12.50	\$15.50	\$16.25	\$15.75
Old iron axles, G. T.	22.75	24.00	*24.00	22.75
Old steel axles, G. T.	22.50	24.50	*27.00	.....
Old car wheels, G. T.	22.50	24.00	22.50	19.25
Steel rails, re-rolling, G. T.	.....	17.50	17.25	.....
No. 1 R. R. wrought, N. T.	20.00	21.50	15.75	16.25

\*Net tons

necessary labor is appreciable and cases have been found where one pitman may be eliminated for approximately every 40 cars in service when slack adjusters are used. With their use it is only necessary to readjust the mechanism when the worn out brake shoes are replaced. Tests also show approximately 20 per cent increase in the life of the shoe.

A number of traction companies are purchasing sufficient sets of adjusters to equip a few cars on trial. Results are shown in the number of resales made through this method. One manufacturer with a curtailed sales force finds that most of his sales are resales from trial installations.

But little factory stock of complete equipments can be kept because of the number of varieties of car trucks in use. Certain parts which are adapted to virtually any style of truck, however, can be stocked. Depending upon the size of the order deliveries can be made by the manufacturers in from one to four weeks. So far as could be learned there have been no changes in price this year.

own uses. There is a shortage in supply in this district and little demand from consumers. Dealers, however, would heavily stock the material if much were forced on the market.

Larger proportions of scrap than formerly are now being used by most mills, except where specified amounts of pig are required. This pig is approximately \$10 a ton higher than heavy melting steel.

## 200 Safety Cars for B. R. T.

The Brooklyn (N. Y.) Rapid Transit Company and the Public Service Commission have come to an agreement whereby 200 safety cars will be purchased for operation on these surface lines. The original order of the commission was for 250 new cars. Two orders of fifty center-entrance trail cars have already been placed. The Commission has approved the operation of the twelve safety cars which have been tried out on the lines with the result that the decision has been reached to order 200 additional cars of this type, making a total of fifty more cars than originally specified.

### General Electric Company's Sales for 1918 Large

Orders Received in 1918 Aggregated \$234,100,000 While Sales Billed Total of \$216,800,000

While the totals of orders received by the General Electric Company in 1918 reached large figures, they were not so great as in the preceding year. On the other hand, the amount of sales billed was larger in 1918 than in 1917. The figures compare as follows:

	1918	1917
Orders received.....	\$234,134,037	\$246,778,491
Sales billed.....	\$216,815,277	\$196,328,318

An important feature of the year was the provision of increased manufacturing facilities. Regarding these and the curtailment of production which followed the armistice Mr. Coffin, chairman of the board of directors, said:

"In order to expedite the completion of government and other contracts essential to the prosecution of the war, your company was forced to make heavy expenditures for additional manufacturing facilities. As a result the rate of production had reached the highest point in the company's history when the armistice was signed on Nov. 11, 1918. The cessation of hostilities resulted in suspensions and cancellations of orders, estimated at the date of closing the accounts at \$30,000,000, leaving a balance of approximately \$80,000,000 of unfilled orders at the end of the year.

"The expenditures for additional land, buildings, machinery and other equipment aggregated \$21,593,996. As these facilities were required for the

manufacture of apparatus and supplies urgently needed in the prosecution of the war, it was imperative that they be provided with the least delay and under circumstances which made economy of construction impossible.

"In view of the fact that a portion of the recent additions to manufacturing facilities will for a considerable time be unused, and having regard to the high cost of such additions, the sum of \$15,224,162 has been written off the plant account, and \$3,186,793 will be included in the cost of unfinished contracts."

The total factory floor space in 1918 was 19,581,000 sq.ft., as compared with 17,573,000 sq.ft. in 1917.

### Ball-Bearing Manufacturers Combine

SKF Administrative Company, 5 Nassau Street, New York City, announces a reorganization, effective May 1, whereby the products of the Hess-Bright Manufacturing Company, the SKF Ball Bearing Company, the Atlas Ball Company and the Hubbard Machine Company will be sold through one central organization. The new company, under the name of SKF Industries, Inc., will thereby be able to offer a comprehensive line of ball bearings, including the Hess-Bright deep-groove type, SKF self-aligning radial and thrust bearings and ball bearing pillow-blocks and shafting hangers. Through the medium of its engineering organization, backed up by a well-equipped laboratory, the new company will be able to place at the service of bearing users the knowledge gained in

many years' study of anti-friction bearings of all kinds. On request, manufacturers' problems will be analyzed in detail and that type of bearing recommended which (independent of sales considerations) is best suited to the conditions met. In addition, the laboratory staff will carry on research studies affecting anti-friction bearing design and application. The new company—SKF Industries, Inc.—will be under the direction of B. G. Frytz, president; W. L. Batt, vice-president; J. P. Walsh, comptroller, and S. B. Taylor, sales manager. The principal office will be at 165 Broadway, New York City, with branches at Boston, Philadelphia, Atlanta, Buffalo, Cleveland, Detroit, Cincinnati, Chicago and San Francisco.

### Track and Roadway

British Columbia Electric Company, Ltd., Vancouver, B. C.—The British Columbia Electric Railway proposes laying a submarine cable across Victoria Harbor for supplying electrical energy for industrial purposes on the Songhees Indian Reserve.

Visalia Electric Company, Exeter, Cal.—The Railroad Commission of California recently approved an agreement between the Southern Pacific Company, the Visalia Electric Company, the Minkler Southern Railroad and the Santa Fe Railroad, under the terms of which the Visalia Electric Company agrees to sell to the Minkler Southern Railroad that portion of its line south of the city of Porterville. The Minkler Southern Railroad has agreed to re-

### NEW YORK METAL MARKET PRICES

	Apr 17	May 1
Copper, ingots, cents per lb.....	15 3/4	15 3/4
Copper wire base, cents per lb.....	17 25 to 18. 00	17 25 to 18. 00
Lead, cents per lb.....	5 00	5 00
Nickel, cents per lb.....	40. 00	40. 00
Spelter, cents per lb.....	6 45	6 40
Tin, cents per lb.....	172. 50	172. 50
Aluminum, 98 to 99 per cent., cents per lb.....	31. 00	31. 00 to 33. 00

† Government price in 25-ton lots or more f. o. b. plant.

### OLD METAL PRICES—NEW YORK

	Apr. 17	May 1
Heavy copper, cents per lb.....	13. 50 to 13. 75	13. 50 to 13. 75
Light copper, cents per lb.....	11. 00 to 11. 25	11. 00 to 11. 25
Heavy brass, cents per lb.....	7. 50 to 8. 00	7. 50 to 8. 00
Zinc, cents per lb.....	5. 25 to 5. 50	5. 25 to 5. 50
Yellow brass, cents per lb.....	6. 50 to 7. 00	6. 50 to 7. 00
Lead, heavy, cents per lb.....	4. 00 to 4. 25	4. 00 to 4. 25
Steel car axles, Chicago, per net ton.....	\$26. 00 to \$28. 00	\$23. 00 to \$25. 00
Old carwheels, Chicago, per gross ton.....	\$22. 00 to \$23. 00	\$21. 00 to \$22. 00
Steel rails (scraps), Chicago, per gross ton.....	\$17. 00 to \$17. 50	\$17. 00 to \$17. 50
Steel rails (fresh), Chicago, gross ton.....	\$17. 00 to \$17. 50	\$17. 00 to \$17. 50
Machine shop turnings, Chicago, net ton.....	\$6. 50 to \$7. 00	\$6. 00 to \$7. 00

### ELECTRIC RAILWAY MATERIAL PRICES

	Apr. 17	May 1
Rubber-covered wire base, New York, cents per lb.....	20	20
Weatherproof wire (100 lb. lots), cents per lb., New York.....	23 00	23 00 to 23. 25
Weatherproof wire (100 lb. lots), cents per lb., Chicago.....	23. 75 to 37. 35	23. 75 to 37. 35
T rails (A. S. C. E. standard), per gross ton.....	\$49. 00 to \$51. 00	49. 00 to 51. 00
T rails (A. S. C. E. standard), 20 to 500 ton lots, per gross ton.....	\$47. 00 to \$49. 00	47. 00 to 49. 00
T rails (A. S. C. E. standard), 500 ton lots, per gross ton.....	\$45. 00 to \$47. 00	45. 00 to 47. 00
T rail, high (Shanghai), cents per lb.....	2. 75	2. 75
Rails, girder (grooved), cents per lb.....	3. 25	3. 25
Wire nails, Pittsburgh, cents per lb.....	3. 25	3. 25
Railroad spikes, drive, Pittsburgh base, cents per lb.....	3. 25	3. 35
Railroad spikes, screw, Pittsburgh base, cents per lb.....	8	8
Tie plates (flat type), cents per lb.....	2. 75	2. 75
Tie plates (brazed type), cents per lb.....	2. 75	2. 75
Tie rods, Pittsburgh base, cents per lb.....	7	7
Fish plates, cents per lb.....	3. 90	3. 90
Angle plates, cents per lb.....	3. 90	3. 90
Angle bars, cents per lb.....	3. 90	3. 90
Rail bolts and nuts, Pittsburgh base, cents per lb.....	4 35	4 35
Steel bars, Pittsburgh, cents per lb.....	2 35	2 35
Sheet iron, black (24 gage), Pittsburgh, cents per lb.....	4 20	4 20
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.....	5 25	5 25
Galvanized barbed wire, Pittsburgh, cts per lb.....	4. 10	4. 10

	Apr. 3	Apr. 17
Galvanized wire, ordinary, Pittsburgh, cents per lb.....	3. 70	3. 70
Car window glass (single strength), first three brackets, A quality, New York, discount.....	80%	80%
Car window glass (single strength), first three brackets, B quality, New York, discount.....	80%	80%
Car window glass (double strength), all sizes AA quality, New York discount.....	81%	81%
Waste, wool (according to grade), cents per lb.....	14 to 17	14 to 17
Waste cotton (100 lb. bale) minimum per lb. Asphalt, hot (150 tons minimum) per ton delivered.....	8 to 13	8 to 13
Asphalt, cold (150 tons minimum, pgs. weighed in, F. O. B. plant, Maurer, N. J.), per ton.....	\$30. 00	\$30. 00
Asphalt filler, per ton.....	\$2. 90	\$2. 90
Cement (carload lots), New York, per bbl.....	\$3. 05	\$3. 05
Cement (carload lots), Chicago, per bbl.....	\$3. 13	\$3. 13
Cement (carload lots), Seattle, per bbl.....	\$1. 53	\$1. 61
Lime oil (raw) 5 bbl. lots, New York, per gal.....	\$1 53	\$1 61
Lime oil (boiled), 5 bbl. lots, New York, per gal.....	\$1 63	\$1 68
White lead (100 lb. keg), New York, cents per lb.....	13	13
Turpentine (bbl. lots), New York, cents per gal.....	78	78

† These prices are f. o. b. works, with boxing charges extra.

construct the road, making it suitable for the operation of steam or electric trains, the new construction to be completed to a connection with the Southern Pacific Company's tracks at Ducor, in Tulare County. The agreement further provides for the joint use of the reconstructed line by all of the lines concerned in the agreement and of the Southern Pacific Company's line between Ducor and the station of Oil Junction, Kern County.

**Topeka (Kan.) Railway.**—Plans have been made by the Topeka Railway for the rehabilitation of its entire system, including track repair, remodeling of cars and improvement of service generally.

**International Transit Company, Sault Ste Marie, Ont.**—A report from the International Transit Company states that it will build about 3,500 ft. of new track and will rebuild about 7,000 ft. of old track.

**St. Catharines, Ont.**—Formal request to the Dominion government has been made by the Ontario Hydro-Electric Power Commission for an order in council authorizing immediate beginning of construction work on two hydro-radial lines, one from Toronto to Bridgeburg and the other from Toronto to London. The two roads will have a total mileage of 250 miles and will cost about \$26,000,000.

**Philadelphia, Pa.**—A contract has been awarded by the Department of City Transit to the North American Railway Construction Company, Chicago, for the first six miles of the proposed Frankford-Byberry line. The contract price is \$370,892. Bids were opened on April 22 for the construction of the superstructure on the Frankford elevated line from Calowhill Street south to within a short distance of Arch Street. The lowest bidder was the Phoenix Bridge Company, Phoenixville, Pa., at \$176,399.

**Reading Transit & Light Company, Reading, Pa.**—The Reading Transit & Light Company is about completing the construction of a new railway bridge over the Reading Railroad Company's tracks at Wyomissing, on the outskirts of the city. The improvement will cost about \$4,500 and will make possible a speeding up of the service.

**Forth Worth, Tex.**—It is reported that a survey will soon be begun by Richard Ferris and H. E. Robison, Fort Worth, Tex., of a proposed electric railway to extend between Forth Worth and Mineral Wells.

**Monongahela Valley Traction Company, Clarksburg, W. Va.**—It is reported that the Monongahela Valley Traction Company will construct a bridge over the West Fork River.

**Morgantown & Wheeling Railway, Morgantown, W. Va.**—It is reported that work will be begun soon by the Morgantown & Wheeling Railway on the construction of an extension from Blackville, W. Va., to Waynesburg, Pa., about 14 miles.

### Power Houses, Shops and Buildings

**Little Rock Railway & Electric Company, Little Rock, Ark.**—An addition will probably be built by the Little Rock Railway & Electric Company to its power house in Little Rock.

**Philadelphia (Pa.) Rapid Transit Company.**—A permit has been granted to the Philadelphia Rapid Transit Company for an addition, 22 ft. x 29 ft., to its power plant at 963 Beach Street.

**West Penn Traction Company, Pittsburgh, Pa.**—The West Penn Traction Company will in the near future locate its central carhouse and machine shop in South Warwood, near Wheeling. The plant will cover a space of 10 acres.

**Chattanooga Railway & Light Company, Chattanooga, Tenn.**—Plans are being made by the Chattanooga Railway & Light Company for the reconstruction of its power house on the Lookout Mountain incline which was recently destroyed by fire.

**Puget Sound Traction, Light & Power Company, Seattle, Wash.**—The Whatcom County Commissioners have granted the Puget Sound Traction, Light & Power Company permission to erect electric transmission lines along the county roads to Ferndale.

### Trade Notes

**W. H. Green** has been appointed Pacific Coast manager of the Chicago Fuse Manufacturing Company, with headquarters in San Francisco.

**Ohio Brass Company, Mansfield, Ohio,** announces that on May 1 its Chicago office moved from 508 Fisher Building to 1217 Fisher Building, 343 South Dearborn Street.

**Holden & White, Inc., Chicago, Ill.,** have been appointed sales representatives for C. I. Earll for the Central and Southwestern states, handling the sale of Earll catchers and retrievers.

**Chas. F. Ames & Company, Ltd., 90 West Street, New York,** has been appointed to act as the New York sales department of the Platt Iron Works, Dayton, Ohio, manufacturers of pumping and power plant equipment.

**Henry M. Sperry,** publicity representative for Union Switch & Signal Company, General Railway Signal Company, Federal Signal Company and Hall Switch & Signal Company, has moved to new offices at 347 Madison Avenue, New York City.

**Blau-Knox Company, Pittsburgh, Pa.,** announces the appointment of J. E. Mason as manager of field sales, in which capacity he will supervise the operation of a wide sales agency plan throughout the country. Mr. Mason was in charge of the Chicago office of the *Engineering News-Record*.

**Van Dorn Electric Tool Company, Cleveland, Ohio,** announces that the new Chicago office is located at 527

South Dearborn Street, and extends through to 528 Plymouth. Wm. Cottrell, sales manager at the Chicago branch, says that the phenomenal increase in business enjoyed by the company is the result of the insistent demand today for mechanical devices of proved efficiency and economy.

**Advance Manufacturing & Tool Company, 1214 St. Clair Avenue, Cleveland, Ohio,** announces that it has recently purchased the assets of the Cleveland Trolley Supply Company, and is now prepared to supply trolley wheels, harps, trolley bases, conductors' seats, window catches, ticket holders, drinking fountains, brush-holders, sleet cutters, or any other product formerly produced or handled by the Cleveland Trolley Supply Company. C. H. Bell is president of the new company and Henry Holland, formerly president of the old company, will remain with the Advance company.

**T. W. Holt,** formerly connected with the Pressed Steel Car Company, Pittsburgh, Pa., has become assistant general manager of the Curtain Supply Company, Chicago, Ill., succeeding the late R. S. Reynolds. Mr. Holt went to Europe in the latter part of 1914 to study foreign conditions and methods of making munitions. Since that time he has had charge of the munition work performed by the Pressed Steel Car Company. He was appointed a member of the committee to represent the forging makers of the country at Washington, and also acted in an advisory capacity for the British Forging Company, owned and controlled by the Imperial Forging Board, Canada. For a period of eight years previous to the war, Mr. Holt has held various executive positions in connection with steam, passenger and freight car construction and fabrication of materials. He has also had charge of wheel foundry, gray iron foundry and malleable foundry operations, having had special training along metallurgical lines.

### New Advertising Literature

**Vulcan Soot Cleaner Company, Du Bois, Pa.** Bulletin on "Soot Cleaners for Return Tubular Boilers."

**Westinghouse, Church, Kerr & Company, New York City:** Illustrated circular on building with concrete, showing typical buildings of various types.

**Joseph Walker & Sons, New York City:** Circular on the merits of the stock of the Manhattan (Elevated) Railway, New York, whose dividend is 7 per cent is guaranteed by the Interborough Rapid Transit Company. It is said that the payment of the dividends on this stock is a prior charge on the Interborough Rapid Transit Company's earnings to its first and refunding bonds, that the lease has always been a profitable one to the Interborough Company except since July, 1918, and that the franchise of the Manhattan Railway does not limit the company to a 5-cent fare.